

# Amazing *For The Commodore* AMIGA<sup>®</sup>

COMPUTING  
Your Original AMIGA<sup>®</sup> Monthly Resource

Volume 7 No. 10 October 1992  
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## Amiga Warrior The A600 comes to America

### In This Issue:

- ◆ Goin' Fishin'  
An interview with Fred Fish
- ◆ Multi-colored Text in DPaint III
- ◆ NTSC Color
- ◆ SIGGRAPH '92

### Reviews:

- ◆ MegageM's CellPro
- ◆ Aladdin 4D
- ◆ Migraph's OCR
- ◆ VXL 30 Accelerator
- ◆ Pro-Net/Pro-Board 2.0

### Projects:

- ◆ MultiKick: Build a  
multiple Kickstart device





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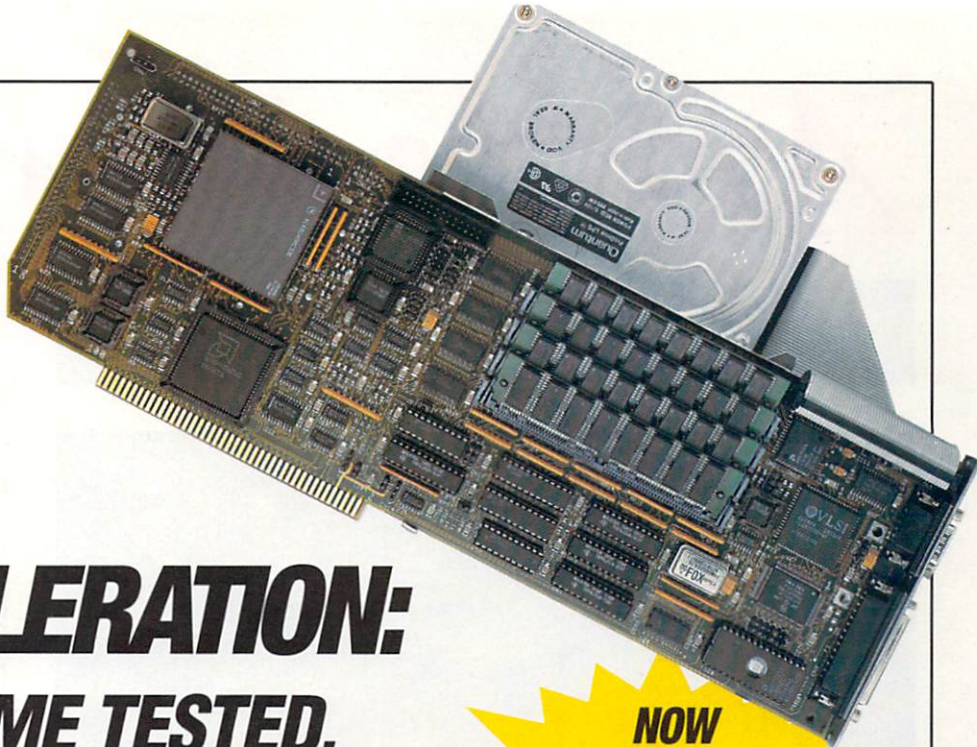
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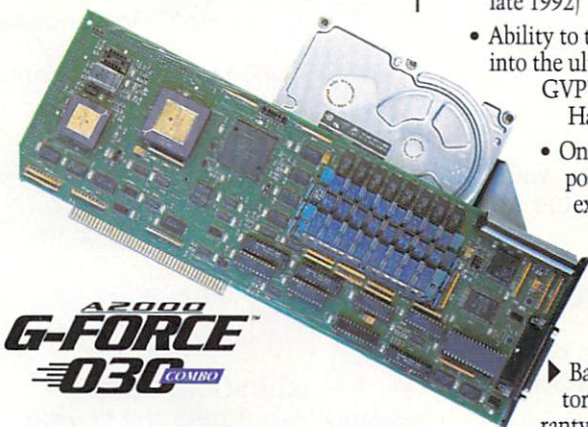
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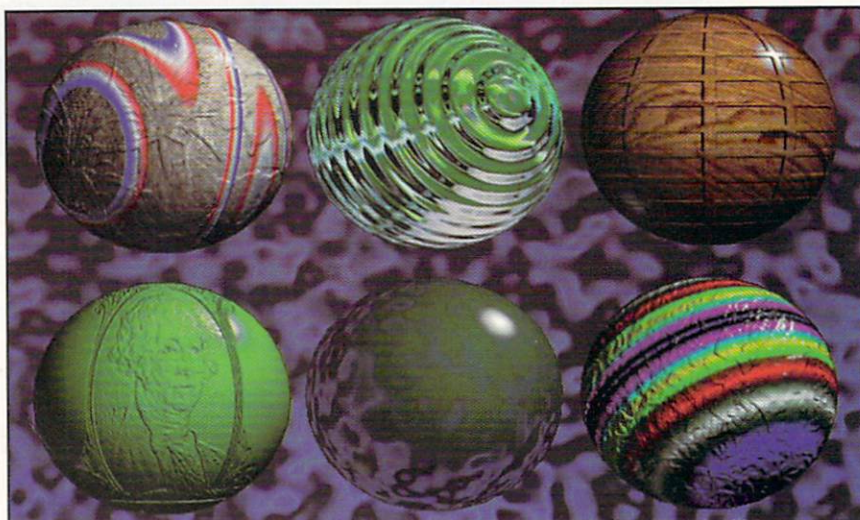


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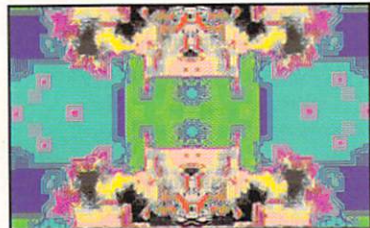


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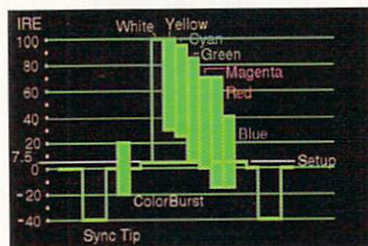
Cover photograph by  
Rick Hess



An image created in **Aladdin 4D** from *Adspec*. See R. Shamms Mortier's review on page 40 for details.



An example of Cellular Mathematics using **CellPro** from *MegageM*



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# Amiga Warrior

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Commodore's newest Amiga is a fighter capable of bringing the best of the Amiga to the American consumer.



**Animatrix Modeler**  
from DuBois Animation



**Russian Blues**  
a 24-bit painting done in DCTV from this month's ARExx column.



From this month's **Video Slot**  
by Frank McMahon



**Hot Tips** offers you a chance to win *Elvira II* from *Accolade*.



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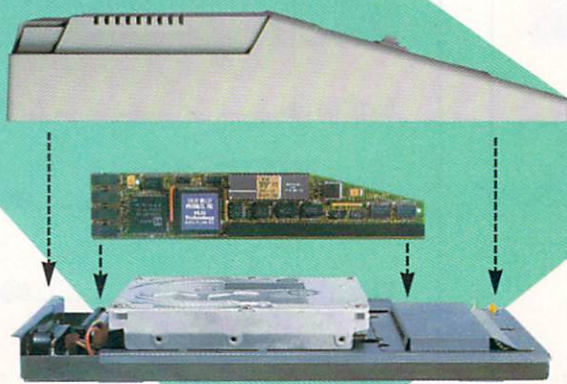
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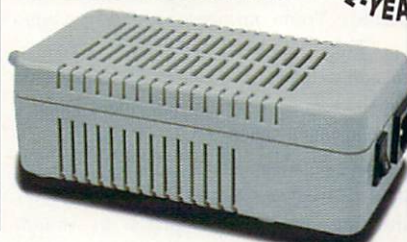
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# EDITORIAL CONTENT

## WOCA-Pasadena

*Amazing Computing* subscribers (and AC readers who attack the newsstands as soon as the new issue of AC arrives) should receive this issue shortly before the World Of Commodore Amiga in Pasadena, September 11 to the 13. I encourage you to attend the Pasadena show. In that effort, we have included a coupon for \$5 off the attendance fee (not to be combined with any other offer) in this issue.

Aside from saving some money on the attendance fee, I believe it is your best opportunity to witness the newest and best the Amiga has to offer. While we are not allowed to say what Commodore will unveil other than the new Amiga 600, I have it on strong authority that CBM will be demonstrating more than one new product for the American market. In addition, Amiga corporations such as Centaur Software, Digital Creations, Great Valley Products, Migraph, ASDG, ICD, Merit Software, New Horizons, Soft-Logik, SunRize Industries, and more have signed up early to bring their newest and best to this event.

Most of our readers know my personal belief regarding Amiga shows. If you can attend, do attend. Aside from sharing your concerns and ideas with fellow Amiga users and vendors, you have an opportunity to listen to and even speak with decision-makers at Commodore. CBM U.S.A. President and General Manager Jim Dionne not only participates in keynotes and seminars but he tours the show floor and he talks with Amiga users in the CBM booth.

Unlike other industries, the Amiga market is unique. Every vendor in the Amiga market knows just how important his customers are. Your comments are always valuable. This is why we have chosen Commodore's largest American Amiga event to date to announce the winners in the *Amazing Computing* Readers' Choice Awards.

Need another reason? Aside from free seminars, prize giveaways, new product introductions, special show prices on Amiga hardware and software, and the ability to hang out with a group of people with similar interests, you may also meet special invited guest—Phillip Robinson. Mr. Robinson is the author of the "The Amiga Is Dead" syndicated article (response in AC V.7.9 editorial). It seems Mr. Robinson has decided to research the Amiga market a little further.

Mr. Robinson has written a second article in which he basically states he did not mean to say the Amiga is dead. The article goes over the many good points of the Amiga and also discusses why he wrote the original article. However, he ends the article by continuing to tell people they should not buy an Amiga. If Mr. Robinson had tried that same line in the Macintosh or MS-DOS markets, no doubt lawyers would still be plastering him with paper.

Due to the mature nature of Amiga users, security screening should not be necessary for Mr. Robinson's appearance. Besides, I am sure Mr. Robinson will be battered enough by reality.

## The A600 Comes to America.

OK, we know it was invented here; we just wondered when Commodore would offer it for sale. Commodore will unveil the Amiga 600 at the World Of Commodore in Pasadena. However, prior to that, CBM will be shipping the unit to dealers throughout the country—hence, the pictures of the Amiga 600 on the front cover of this issue and a discussion of its features in the article on page 48.

AC has been watching the appearance of the Amiga 600 since Phil South covered its European launch in the May issue of AC. We studied the computer again when Commodore U.K. launched it in May (AC V.7.7). So why do we show it again here? The most important fact is that it is now available in the country that created it. It also has had a few changes incorporated since the original units were shipped in Germany.

This is not unusual for any company. Most American producers have decidedly different products in other countries from their American counterparts. Some of this is caused by a difference in tastes. A candy bar in Germany or Switzerland is much sweeter than the same brand sold in America. The English prize their tea. If you have ever been fortunate enough to have a friend, not an importer, send you tea from England, then you understand why.

Another reason for the differences is the necessity of what is being offered. The Amiga 1500 never made it to the U.S. One assumption is that the machine, a hybrid 500, was designed to be a step up from the standard

Amiga 500 to accustom users to more options. American consumers did not have this problem. They were using the Amiga 2000 from its first release. Each market tends to have consumers with different styles. The American model Amigas need more storage and power.

It seems that the Amiga 600 has benefited from testing in Europe. The end result is a machine with a larger hard drive and the most current operating system, Workbench 2.1. However, at this point I must issue a warning: Commodore's efforts to provide the best also means they have cautioned us that the machine sent for this article may differ from the actual machine shipped. I do not mind. I hope they keep expanding the Amiga.

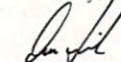
## SIGKids

In closing, I would like to offer a personal thanks to Amiga artist Curt Kass. In "And furthermore..." on page 96, we discuss the efforts of 11 bright, motivated, and enthusiastic Amiga students. They spent a week at SIGGRAPH '92 quietly demonstrating what the Amiga can do best. SIGGRAPH was filled with a great many high-priced and overrated graphic solutions. But behind the scenes, these students were showing the Amiga actually producing product.

This effort was accomplished because Curt Kass believed in the Amiga and believed in the students. His effort not only provided the Amiga SIGKids their own area but also the equipment to learn and create a project. He worked with the students every day to help them focus on their task and learn from each other. Mr. Kass provided the coaching necessary to see the job completed.

Mr. Kass demonstrated what is needed in every endeavor. He combined the best of the Amiga with the best of these students and let them expand what could be done. Mr. Kass's effort is an excellent example of what an individual can accomplish in this market. Thank you, Mr. Kass; your effort is appreciated.

Sincerely,



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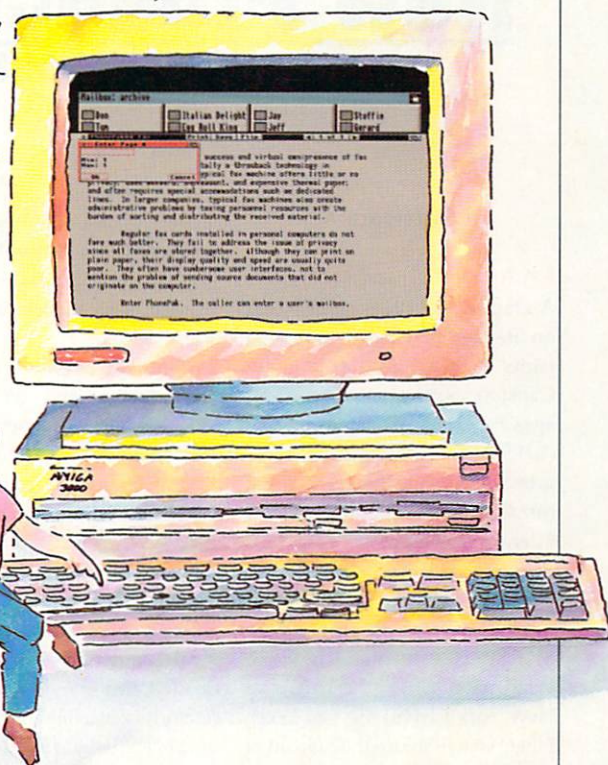
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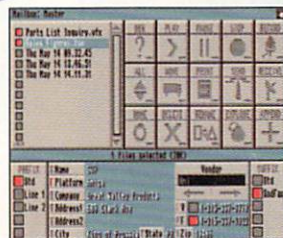
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PhonePak requires 2MB RAM and a hard drive, and is FCC certified for use in the United States.  
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# New Products

## & Other Neat Stuff

### • Software •

#### An American Tail

A graphic adventure game based on Stephen Spielberg's animated films is now available from Capstone Software. Designed for ages 7 and up, *An American Tail* (\$44.95) features digitized backgrounds from the films, intriguing puzzles and games, and dozens of interactive characters. Players join Fievel Mousekewitz in his quest to reach his family and foil the fiendish schemes of the Mott Street Maulers and the Cat R. Waul gang. From the streets of New York City to the Old West, Fievel strives to run the cats out of the city and help Tiger and Wylie Bump stop the giant mousetrap. To launch the game, Capstone is sponsoring The Fievel Sweepstakes, with a grand prize trip for four to Universal Studios Florida. Other prizes include videotapes, Fievel dolls, and posters. *Capstone*, 14540 S.W. 136th St., Suite 204, Miami, FL 33186, (800) 468-7226, Inquiry #205



**ANIMATRIX™  
MODELER**  
"Hands-on" 3-D Modeling  
for the Amiga  
DUBOIS ANIMATION

#### Animatrix Modeler

For the first time, Animatrix Modeler now provides the ability to view and model in real-time stereoscopic virtual reality, using either the X-Specs glasses from

Haitex or the supplied red-blue glasses. This represents a breakthrough in 3-D modeling on the Amiga, and must be seen to be appreciated.

Animatrix Modeler (\$139.95) provides the "hands-on" approach; all operations are performed in perspective stereo or non-stereo mode. Features include real-time rotation, scaling, and translation, single and grouped point editing, edge and face subdivision, point jointing, magnet, reflect, clone, extrude, hide, combine, and keyboard equivalents. Objects can be loaded and saved in six formats, including *Imagine* and *LightWave*. *duBois Animation*, 1012 N. Chartrand Ave., #F, Edmond, OK 73034, (405) 348-4670, Inquiry #206

#### Apogee 3-D Fonts Collection

The Apogee 3-D Fonts Collection (\$80) is a set of 3-D fonts specifically designed for broadcast video. These fonts take advantage of the advanced features of the *LightWave 2.0* modeler. The 10 fonts are Helvetica, Times, Courier, Avant Garde, Cooper, Chancery, Brush Stroke, Eurostyle, Futura, and Symbols. Each font contains all upper and lower case letters plus eight symbols—a total of 700 objects. *Digital Arts*, 20515 SW 114 Ct., Miami, FL 33189, (305) 378-8734, Inquiry #207

#### Audio Gallery

Fairbrothers released three more titles in their Audio Gallery series of talking picture dictionaries—Russian, Korean, and English for Romance speakers.

Audio Gallery is a foreign language learning tool which employs Amiga graphics and digitized speech—the modern way to help one learn a foreign language. Korean (\$129.95) features the full use of Hangul characters, Russian

(\$129.95) utilizes Cyrillic Alphabets from Classic Concepts of Bellingham, WA, and English (\$89.95) can be played in French, German, or Spanish translation mode.

Enhancements include an iconized table of contents and a new gadget-scrollable online dictionary. All Audio Gallery products have been upgraded for AmigaDOS 2.04 and A3000 compatibility. *Fairbrothers*, 5054 S. 22nd St., Arlington, VA 22206, (703) 820-1954, Inquiry #208



#### BibleReaderPro!

*BibleReaderPro!* (\$89.95) replaces *EasyScript!* Software's *BibleReader*. It features many capabilities of *BibleScholar*, but a hard drive is not required. Dual bindable windows, a built-in word processor, instant access to any book, chapter, and verse, a large list of topical references, 800,000 character concordance, and Amiga speech are just some of the features. Two floppy drives and 2MB of RAM are required. *EasyScript!* Software, 10006 Covington Dr., Huntsville, AL 35803, (205) 881-6297, Inquiry #209

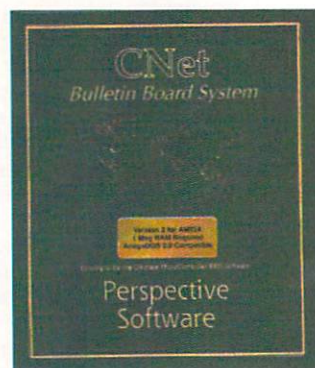
#### BibleScholar! 2.0

This new version (\$149.95) offers a display choice of PAL 640 x 256, 640 x 525, or NTSC 640 x 400. The concordance and context search let the user instantly locate 99 percent of all words/combo of words contained in the Bible. Mark any block of text and port it to a file, to an Arexx-compatible word processor, or to *BibleScholar's* built-in word processing features. Bound or independent windows allow the user to compare verses

from different parts of the Bible, or from different translations. A demo disk is available from *EasyScript!* for \$10. A hard disk and 2MB of RAM are required. *EasyScript!* Software, 10006 Covington Dr., Huntsville, AL 35803, (205) 881-6297, Inquiry #210

#### Business Front

Designing Minds Software announced the release of *Business Front* (\$129), professional accounting software for the Amiga. General Ledger features include a user-definable chart of accounts, sub-account numbers for job costing, standard built-in financial reports, and flexible report formats through the top form. Accounts Receivable features include alpha-numeric customer numbers for easy recall, automatic interest calculations for overdue accounts, complete aging reports with or without details, user-definable terms of sale, automatic discounts based on payment terms. Accounts Payable features include alpha-numeric vendor numbers for easy recall, bills due reports, mark bills for payment, partial, or full, payment search by invoice number or vendor number. 1MB of RAM is required and a hard drive is recommended. *Designing Minds Software*, 3006 North Main, Logan, UT 84321, Inquiry #211



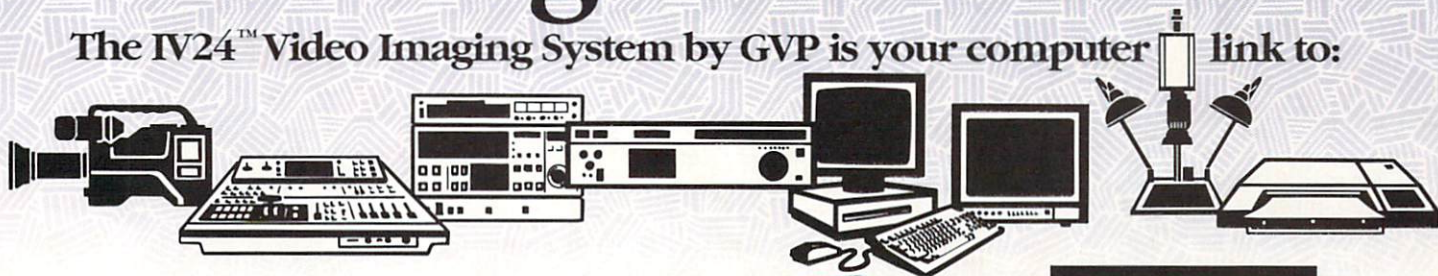
#### CNet v2.20 Bulletin Board System

*CNet v2.20* (\$129.95) is a fully multitasking BBS for all models of the Amiga. Supporting up to 24 phone lines, *CNet* is equally at home operating a small single-line BBS, or as an international FIDO



# Missing Link Found

The IV24™ Video Imaging System by GVP is your computer link to:



You have **only** 1 video slot in your Amiga®. **Only** GVP's IV24 makes sure you take maximum advantage of it. No other multi-function video enhancement

peripheral links your Amiga to more video equipment, multi-media and other devices, boards and programs than GVP's IV24.

**Check out these features:**

- ★ Separate Composite and RGB Video Genlocks
- ★ 1.5MB, 24-bit, 16.8 Million Color Frame Buffer
- ★ Realtime Framegrabber/Digitizer
- ★ Flicker-Eliminator (de-interlaced video)
- ★ RGB, Composite, S-VHS and optional Component (YUV) Format Compatibility with the VIU
- ★ Picture-In-Picture (PIP) Video-Over-Application or Application-Over-Video Display
- ★ Digital and Analog Key Inputs.

**GVP's bundled software is your link to creative imaging.** There's absolutely no limit to your creativity, imaging and fun with



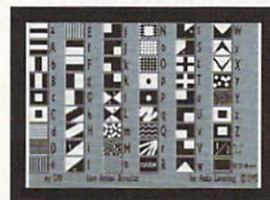
the full range of software included with your IV24: **Desktop Darkroom™** brings the photo shop to your desktop with filters,

special effects and color separations capability from images captured by the IV24 and video camera, VCR, other video sources. Explore photography's future, today.

**MyLAD™ (My Live Action Director)** makes everyone a professional videographer with a 3 signal, 2-input switcher and 50 spectacular transitions.

New, enhanced **Macropaint-IV24™** lets the artist in you truly express itself with 16.8 million color paint and image digitizing that shows your work in 24 bits — as you use it.

Plus, an easy-to-learn video titling system for your videos and multi-media presentations, as well as an introduction to the exciting world of 3-D modeling.



▼ Macropaint IV24 ▲ MyLAD



▲ Desktop Darkroom

What's your link to GVP's IV24? With the IV24, all the bundled software and your choice of VIUs, your links are endless.

**"I found a link to creating great special effects on Nickelodeon's Nick Arcade..."**

Karim Miteff Co., Producer, Nickelodeon Arcade, Bethesda/Miteff Productions, Orlando, FL

"I created 24-bit files from graphics to keep their colors intact. These images were captured by the Quantel Paintbox® from the IV24's analog RGB output. The Paintbox generated background, then captured by the IV24 via RGB. The most telling testament to the board's quality is that the IV24 received the best response of all the Amiga-related devices I have shown broadcast engineers."



Graphic Courtesy of Nickelodeon

**"I found a link to corporate presentations"**

Bill Evans, Corporate Communications Technician, Fabmet Corp., Garden Grove, CA

"I use the IV24 mainly as a 24 bit display device in an A3000. I scan in 24 bit images with an Epson® 24 bit scanner, and then network them to a Video Toaster®. The finished product is displayed in our training room on two 27" Mitsubishi® monitors I will also use the IV24 with a Polaroid® freeze frame unit."

**"I found a link to great animations..."**

Tom Hutchison, Producer, Wild Orchid Graphics, City Rock, OR

"IV24 is what I've been waiting for. I use it with Imagine® software to produce animations for a local cable company. I really like being able to use one monitor and have a de-interlaced output that integrates into the system better than any other frame buffers I looked at."

**"I found a link to a money-making opportunity..."**

PAUL GILMAN, Entrepreneur (Scientist / Retired, Kodak), Personal Sports Cards, Penfield, NY

"I bought GVP's IV24 so my grandson and I can make and sell personalized baseball cards with Deluxe Paint®. The IV24 is the only product on the market with the RGB IN and OUT I needed to connect my video camera to a Kodak® thermal printer. It suits my needs perfectly. I've used many IV24 features — including Picture-In-Picture — and they're all superb."



## IV24'S VIU:

**Your link to more power and productivity from your current hardware**

The heart of every IV24 is the Video Interface Unit (VIU) with fully adjustable, software controlled, multiple video

format capability for complete versatility and flexibility when it comes to video production signal compatibility. Choose:

### VIU-S (RGB Splitter):

Composite, S-Video (Y/C) and RGB input sources; sync generation; signal line stabilization; both Composite and S-Video for video tape recording or standard monitor viewing; input for external digital or analog Composite key source for Chroma/Luminance keying.

### VIU-CT (Component Transcoder):

All the VIU-S features, plus RGB to Y/R-Y/B-Y and Y/R-Y/B-Y to RGB input and output conversions for Betacam/MLI; VGA-style monitor passthrough.

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For more information or your nearest  
GVP Dealer, phone 215-337-8770 today.  
For technical information call 215-354-9495

GREAT VALLEY PRODUCTS, INC. PHONE 215-337-8770

600 CLARK AVENUE KING OF PRUSSIA, PA 19406 U.S.A. FAX 215-337-9922



## New Products

& Other Neat Stuff

Net or UUCP network node.

Several BBS users can be connected to the Amiga in the background while you operate a word processor or spreadsheet. CNet requires 1MB of RAM, plus another 200K for each phone line. All multi-serial port cards are supported.

The system installs on any hard drive, and comes with complete instructions. Other features include multi-user conferencing, several XPR file transfer protocols, true visual editing for ANSI users, and a unique password system for security. The system operator can extend the system still further with the addition of C Language, AmigaDOS, ARexx external program modules for games, utilities, or business applications. Those wishing to see CNet v2.20 online may call Perspective Software's 24-hour customer support BBS. 2400 baud: (313) 981-1524, 9600 baud: (313) 981-6150, 14,400 baud (v32 BIS): (313) 981-4113. *Beverly James Products, P.O. Box 40191, Redford, MI 48240, (313) 537-6168, Inquiry #212*

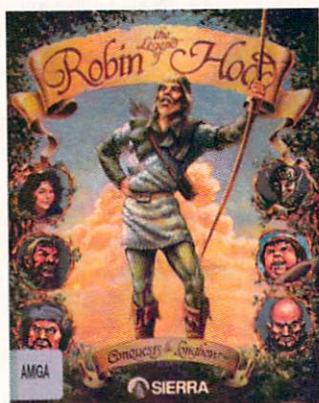
### Conquests of the Longbow: The Legend of Robin Hood

Sierra On-line has just released Conquests of the Longbow: The Legend of Robin Hood (\$59.95), another title in their role-playing line of games. Journey through the ever-enchanting Sherwood Forest as the most enduring outlaw of all time. Blending History, legend, and pure magic, designer Chisty Marx recounts this age-old tale with amazing detail and authenticity.

Cross the threshold from modern computer to Medieval England, assume the role of Robin Hood and join his band of loyal men—Little John, Will Scarlet, and Friar Tuck—in the quest to save King Richard the Lionheart. For those

who dare, raise his ransom by force or skill. Money alone won't win his release nor protect our highwaymen from unrelenting attacks by the Sheriff of Nottingham. A keen wit will be the weapon of choice and the key to finishing the quest.

Features include 64-color art, an original soundtrack based on medieval music styles, and dozens of pathways and alternative solutions leading to any one of four possible endings. 1MB of memory and hard drive are required. *Sierra On-line, P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468, Inquiry #213*



### Covert Action

In the 1990s, our national nightmares are haunted by wild-eyed political extremists, greedy and ruthless drug lords, and lunatic military dictators. For too long we have felt powerless to stop them. As superspy Max Remington, challenge these threats and neutralize their shadowy schemes of terrorism, smuggling, and extortion. A seasoned veteran of modern, hi-tech undercover operations, Remington always obeys two rules of Covert Action: 1. use your intelligence. 2. If rule one fails, use your weapons. Recognize faces, break codes, unravel plots, decide which leads to follow and ignore, and more. *MicroProse Software, 180 Lakefront Dr., Hunt Valley, MD 21030, (301) 771-1151, Inquiry #214*

### Dojo Dan

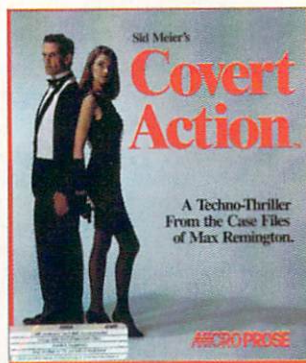
Set in the mythical land of Banzaari, Dojo Dan (£25.99) takes on the evil warlord Valrog and his

hideous hordes of mutant supporters. The mutants plaguing the land must be overcome before Dojo Dan can face the ultimate challenge of Valrog himself.

Twenty grueling stages of exciting action, with puzzles and bosses, test even the best players. Other features include a soundtrack by Alistair Brimble, 160 colors on-screen at a time, and more. *Europress Software, Europa House, Adlington Park, Macclesfield, SK10 4NP, 011-44-625-859-333, Inquiry #215*

### EasyClipArt! Christian Images

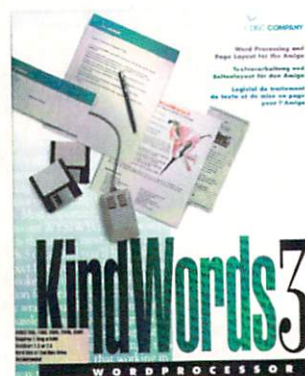
Christian Images (\$24.95) are for Amiga users who want to enhance church programs or Bible research with Biblical-oriented clip art. This collection of DeluxePaint-type brushes can be pasted, stretched, and changed to fit just about any user's needs. Over 50 high-quality brushes ranging from seasonal art to religious symbols are included. *EasyScript! Software, 10006 Covington Dr., Huntsville, AL 35803, (205) 881-6297, Inquiry #216*



### KindWords 3

The Disc Company has released a new version of KindWords (\$129), their word processing and page layout program. Creating attractive documents is easy. Features include automatic text flow around the contours of graphics, context-sensitive online help, a WYSIWYG window-style interface, Proximity spelling checker and thesaurus, and much more. Owners of excellence, ProWrite, Pen Pal, Quick Write, Scribble, TextCraft, or WordPerfect can trade up to KindWords 3 by send-

ing \$50 and the original program disk of one the above programs. *The Disc Company, P.O. Box 67713, Los Angeles, CA 90067, (301) 207-1600, Inquiry #217*



### LabelDex! 1.5

LabelDex! 1.5 (\$74.95) now features VideoLibrarian, a feature which catalogs videotapes and prints both spine and face VHS and audio cassettes. LabelDex is also an integrated mailing database and labeling program. It can organize mailing lists or floppy disk libraries and print a large variety of standard and custom labels. It can even be used as an Arrex script editor for remote control of other Arrex-compatible programs. Supported printers include Hewlett Packard LaserJet, DeskJet, PostScript, and Epson. 1MB of RAM is required. *EasyScript! Software, 10006 Covington Dr., Huntsville, AL 35803, (205) 881-6297, Inquiry #218*

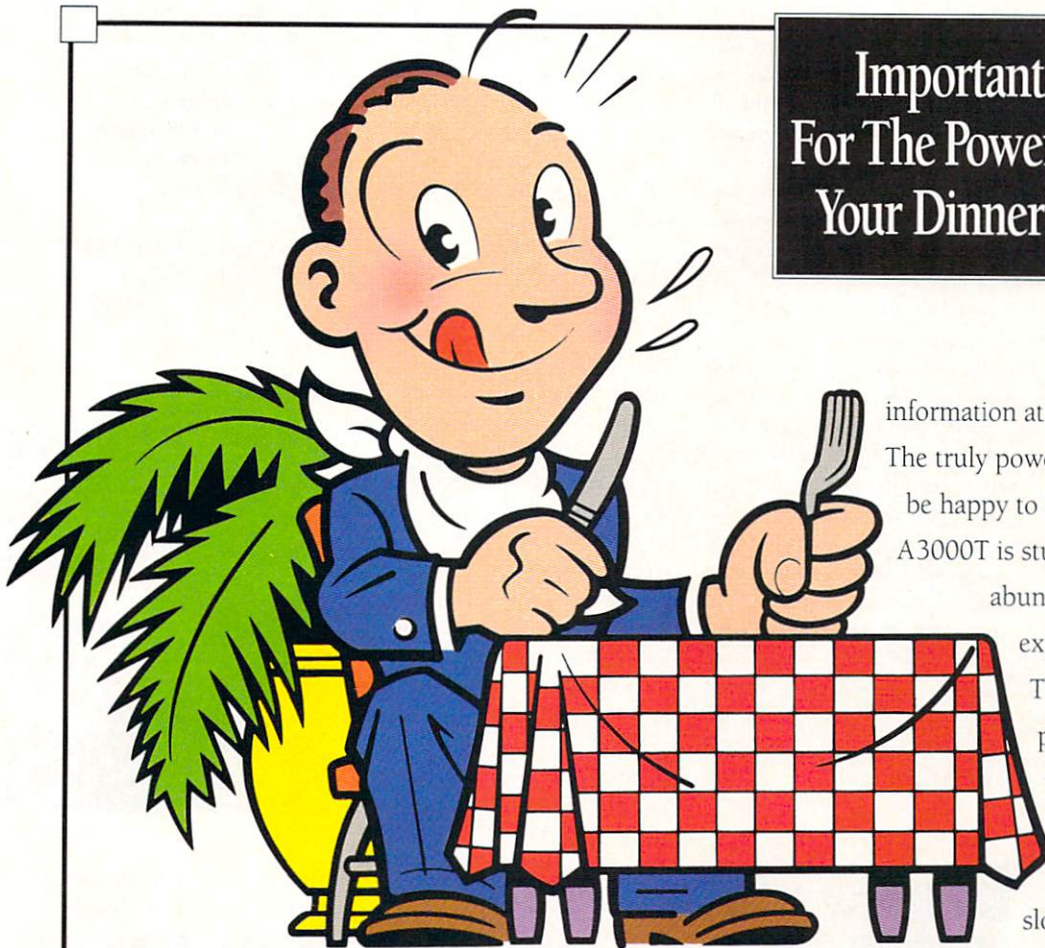
### Lavandiss Role Playing Game System

Lavandiss Role Playing Game System (\$39.95) is unique in many ways, but mainly in that the package comes with a module generator which allows the player or a friend to create the play world he or she wishes.

The module generator allows placement of spell scrolls, potions, monsters, treasures, heroes, and villains. Choose a scenario with different game tasks and goals. Features include two game play view points, a 3-D eye point view window of game terrain, and more. Two pre-made modules are included. 1MB of RAM is required.



## Important News For The Power Hungry: Your Dinner's Ready.



information at breakneck speed. The truly power famished will be happy to know that the A3000T is stuffed with an abundant selection of expansion slots. There's a co-processor slot. A video slot for internal devices. Up to four PC slots. And up to five Zorro III slots. Every

**C**ome and get it.

The new Amiga® 3000T multimedia workstation tower—the most expandable, flexible Amiga ever built.

Now powered by a 25 MHZ Motorola 68040 CPU, the A3000T is faster than ever before. (Current A3000T users can upgrade to a 040-based accelerator card for just \$1,998.)

The A3000T features a 200MB hard disk drive. A 3.5" floppy disk drive. 5MB of RAM, expandable to 18MB. And 32 bit bus architecture to transfer mammoth amounts of

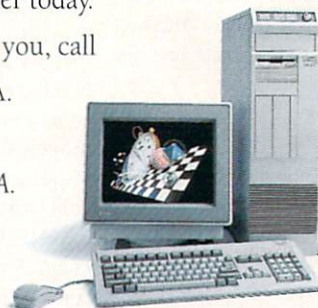
Amiga 3000 series computer comes with Commodore Express™ Gold Service options.\* And convenient leasing terms are available.

Now, you'd expect a power feast like this to carry a fat price tag. But now through September 30, you can sit down to an Amiga 3000T with a monitor for just \$5,998.\*\* Which in itself is a powerful reason for seeing your Commodore dealer today.

For a dealer near you, call 1-800-66-AMIGA.

In Canada, call 1-800-661-AMIGA.

Bon appetit.



**Commodore**  
**AMIGA**

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Circle 101 on Reader Service card.



## New Products & Other Neat Stuff

Cottage Software, #3-3829 Regina Ave., Regina, Saskatchewan, S4S 0H7, Canada, Inquiry #219



### MaxiPlan 4

The Disc Company's MaxiPlan 4 (\$149)—a spreadsheet, database, and charting program—lets you take control of financial analysis, database lists, marketing research, and other number and data tasks. Organize, calculate, and present your data graphically with colorful charts all in one program. Features include macro commands, dynamic file linking, and more. Owners of MaxiPlan, PlanIt, Advantage, Analyze, SuperPlan, or VIP Professional can trade up to MaxiPlan by sending the original program disk of one of the above programs and \$75. *The Disc Company*, P.O. Box 67713, Los Angeles, CA 90067, (301) 207-1600, Inquiry #220

### MegaFortress

MegaFortress, a nearly invisible attacker, carries enough firepower to destroy the most heavily defended targets in the world. Amiga owners can test their long range strategic air assault with MegaFortress (\$59.95). Based on Dale Brown's best-selling novel *Flight of the Old Dog*, MegaFortress features the modi-

fied B-52H Stratofortress aircraft loaded with state-of-the-art sensory apparatus and weapon systems. The arsenal includes the latest air-to-air and air-to-ground missiles, anti-radar missiles, air mine rockets, high explosive iron bombs, and infrared guided glide bombs. In addition, the program includes state-of-the-art radar and 3-D terrain mapping screens. The game's 31 missions take place in three theatres—Desert Storm, Eastern USSR, and USA Red Flag training area in Nevada. In each mission, the user plays the role of pilot, co-pilot, navigator, electronic warfare, and offensive weapons officer simultaneously. Along with confronting numerous threats from enemy fighters and SAMs, the user must master the art of resource management. *Three-Sixty*, distributed by Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404, (800) 245-4525, Inquiry #221



### Migraph OCR v1.1

Migraph OCR Version 1.1 (\$299) corrects the bugs that were found in the initial release of this optical character recognition software. A revised interface with a Workbench 2.0 look and feel is a new enhancement. Users can also have the ASCII text file sent directly to the text editor of their choice. Other features include support for the Alfadata and Golden Image Hand Scanners, NTSC and PAL compatibility, and four linguistic databases—English, French, German, and Dutch. The software now loads monochrome IFF and TIFF scan files, and is trainable for special characters and languages ac-

cessible from the keyboard. *Migraph OCR* will run on any Amiga with 2.5MB of RAM and a hard disk drive. Systems with flatbed scanners require 4.5MB. *Migraph*, 32700 Pacific Highway S., Suite 12, Federal Way, WA 98003, Inquiry #222

### Mini Office

Mini Office consists of five modules—a wordprocessor, spreadsheet, database, graphics, and disk utilities. All facilities in Mini Office are totally integrated with each other. A cleverly designed icon system offers a quick response to the user's commands. The wordprocessor features a 50,000-word dictionary and spellchecker, a utility to load ASCII files, and a mailmerge option. Incorporate the spreadsheet into a graph format for maximum flexibility. Use the 3-D bar and pie charts in the spreadsheet, or manage your files with the disk utilities. Mini Office requires 1MB of RAM. *Europress Software*, Europa House, Adlington Park, Macclesfield, SK10 4NP, 011-44-625-859-333, Inquiry #223

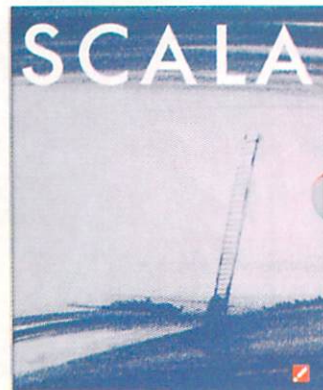
### Motion Man

Motion Man (\$149.95) is a fully articulated 3-D model of a human-like figure for use in *LightWave* animation. It is derived from and remains identical in structure to *Cycleman* for *Imagine*, but is fully optimized for *LightWave* users. The figure comes as a complete set of 60 individual body parts. These are automatically assembled into a logical hierarchy of movable limbs by a *LightWave* scene file which is provided. All limbs are jointed—right down to the fingers, mouth, and eyelids. *Anti Gravity Products*, 456 Lincoln Blvd., Santa Monica, CA 90402, (310) 393-6650, Inquiry #224

### Personal Finance Manager Plus

Based on the highly successful *Personal Finance Manager*, PFM Plus (£39.95) is packed with improvements designed to give you better control over your money. Features include increased budget handling, full printer report formatting, desktop calculator, extensive user configurable op-

tions, and handling of multiple accounts with auto transfer. PFM Plus automatically balances against statements or bank machines if possible. Four different charts or graphs are available to choose from. The program is easy to use and fully mouse-driven. *MichTron/Microdeal*, PO Box 68, St. Austell, Cornwall, PL25 4YB, (011) 44-726-68020, Inquiry #225



### Scala CDTV Home Video Titler

Add a whole dimension to your home videos with the Scala CDTV Home Video Titler (\$149). Make them fun to watch and fun to make. Add text overlays and other effects to your home videos. Create presentations that combine logos, pictures, text, and artwork. No other program combines ease-of-use with raw power.

It also features 25 text/brush transitions, 34 picture transitions, a smooth credit scroll, text with outline, shadow, bold, or underline. IFF backgrounds can be loaded and text can be added to them. A genlock and keyboard are required. *Scala Inc.*, 12110 Sunset Hills Dr., Suite 100, Reston, VA 22090, (703) 789-8045, Inquiry #226

### SIGH-low

At last, an interface to your Heath ID-5001 and your Amiga. *SIGH-low* (\$39.95) offers complete ARexx control over the Heath Advanced Weather Computer. Example ARexx code and manual are included. The connecting cable is also available at an additional cost. 1MB of RAM is required to run



INTRODUCING  
THE WAVE  
OF THE FUTURE

# The SAS/C<sup>®</sup> Development System, Version 6

Ride the wave of the future with our new release of the SAS/C Development System—Version 6. It's fast, flexible, and powerful, offering you new ways of producing the most efficient code for the Amiga<sup>®</sup>. Explore a whole new world of development capabilities with these new Version 6 features and enhancements:

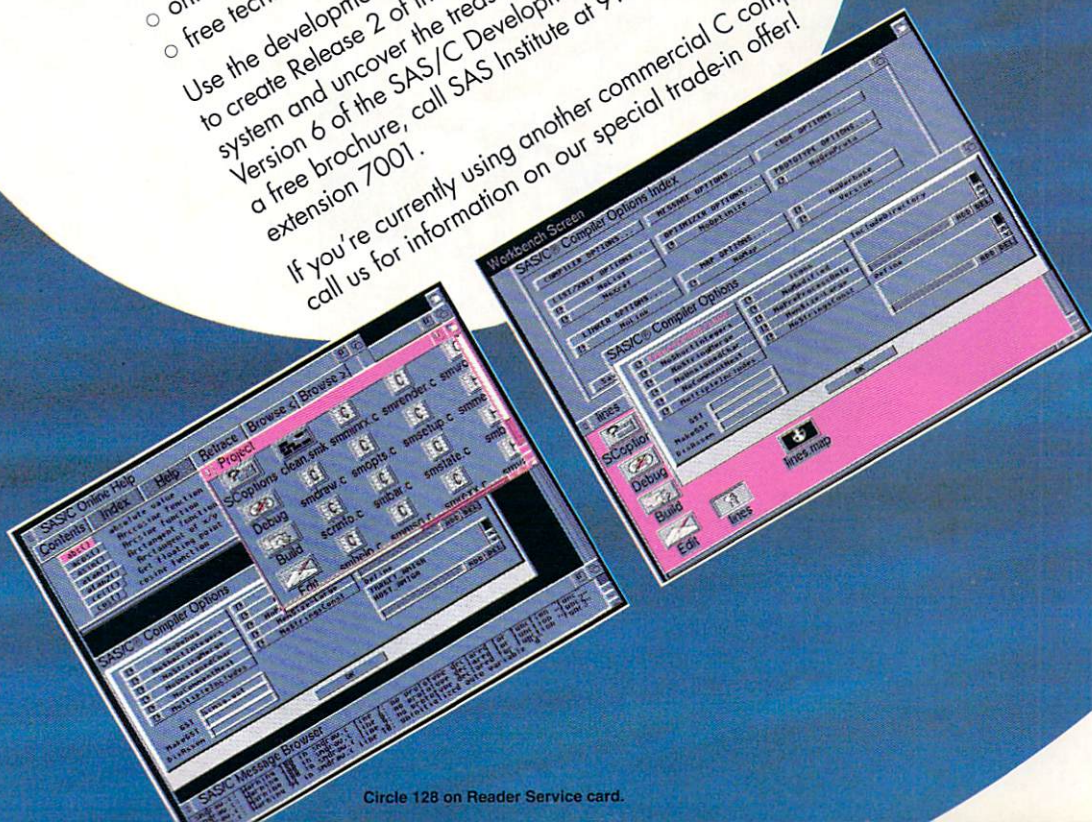
- an integrated environment
- fully ANSI-compliant compiler and libraries
- improved CodeProbe debugger
- new global and peephole optimizers
- greatly enhanced error and warning messages
- all new documentation
- increased AREXX support
- online help
- free technical support.

Use the development system that Commodore<sup>®</sup> relied on to create Release 2 of the Commodore Amiga operating system and uncover the treasures it holds! To order Version 6 of the SAS/C Development System or for a free brochure, call SAS Institute at 919-677-8000, extension 7001.

If you're currently using another commercial C compiler, call us for information on our special trade-in offer!

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SAS Institute Inc.  
SAS Campus Drive  
Cary, NC 27513





## New Products & Other Neat Stuff

SIGH-low. Software Industry & General Hardware, 677 B Main St., Ramona, CA 92065, (619) 788-0447, Inquiry #227



### SimEarth

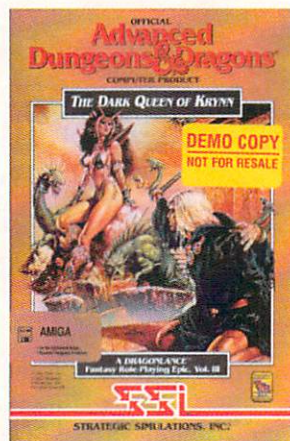
SimEarth (\$69.95) challenges players to manage a simulation of Earth riddled with pollution, global warming, and nuclear war. If this seems too real, start over and create a fantasy world of intelligent dinosaurs and carnivorous plants instead. Another option is to nuke all cities and breed robots. Explore the game with no set goal or develop a civilization of your own. Create your own planet from scratch, lay down forests, jungles, and swamps, introduce animal species, view the planet as a flat map or revolving globe, and solve real-life problems such as pollution, global warming, and nuclear war. Maxis, 2 Theatre Square, Ste. 230, Orinda, CA 94563-3346, Inquiry #228

### The Dark Queen of Krynn

Strategic Simulations Inc. has released the conclusion to its award-winning AD&D Dragonlance fantasy role-playing adventure. The Dark Queen of Krynn (\$49.95) brings a close to the epic that be-

gan with Champions of Krynn and was followed by Death Knights of Krynn.

The people of Krynn are threatened by the diabolic whims of the Dark Queen. Ansalon's most brave and fierce warriors embark on a voyage to the shore of the mysterious Taladas. The warriors encounter danger from the top of the Tower of Flame to the depths of the sea. They are faced with unearthly creatures never seen before. They find that they must plunge to the very heart of the Abyss to save Krynn from cataclysmic disaster. Characters can be transferred from the first two games. A rule book and an adventurer's journal are included. A clue book is available for \$12.95. Strategic Simulations, Inc., 675 Almanor Ave., Suite 201, Sunnyvale, CA 94086-2901, (408) 737-6800, Inquiry #229



### The Spoils of War

Throughout history, man has always felt the need to expand, colonize, and conquer. The Spoils of War pits the player against up to three human or computer-controlled opponents in a desperate struggle to discover and colonize faraway lands. Of course, all the other players have the same designs on your territories and you will have to fight long and hard to achieve victory. Features include the option to include natives, 10 difficulty levels, seasonal impact on movement, four types of explorers to choose from, command of various forces, and more. Battle on land or at sea

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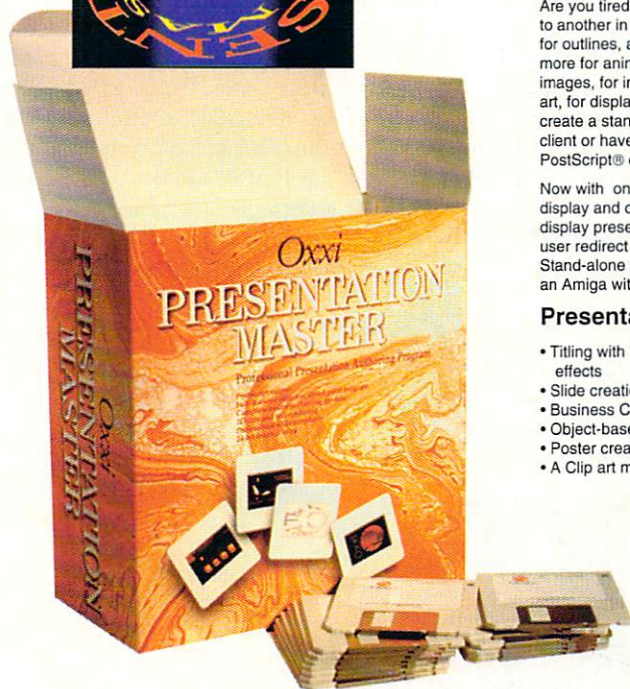
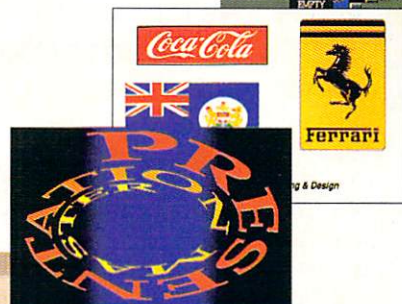
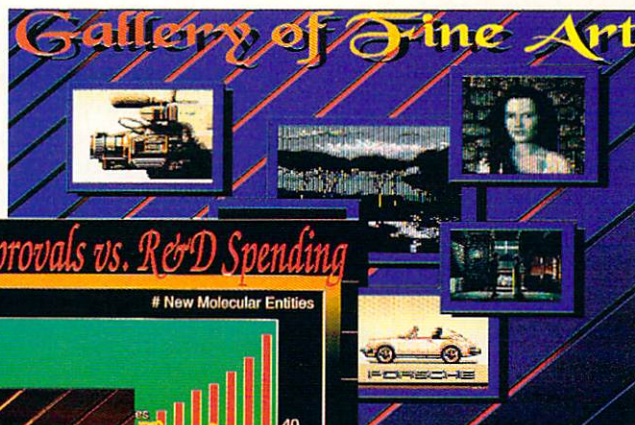
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## New Products

8 Other Neat Stuff

### Vertex 1.62

The Art Machine has released Vertex 1.62 (\$40), a 3-D object editor/converter. Vertex offers transparent support for most 3-D file formats, an intuitive 3-D interface which allows you to view and transform the objects with the mouse, unique distortion tools such as multiply, scale map, twist, randomize, and gravity, fast solid models and real-time rotating wire frames, a free-floating hot spot for precise transforms, global tools, and more. Vertex can multitask and has a complete ARexx port. *The Art Machine*, 4189 Nickolas, Sterling Heights, MI 48310, (313) 939-2513, Inquiry #232

### Vidia Image Library

The first two packages in Vidia's digital stock photography library are titled *Winter & Snow* and *Postcard Scenics* (\$49.95 HAM, \$169.95 24-bit). The first compilation includes photos of glacier ice, snow-covered mountains and trees, rivers, icy ponds, and wilderness winter scenes. The other features an eclectic mix of striking photos, including green rolling hills, sunsets, ships at dock, cities at night, and more. Each package contains 24 photos. Vidia, P.O. Box 1180, Manhattan Beach, CA 90266, (310) 379-7139, Inquiry #233

### Volume 8: VideoMaker v2.0

CeV Design has brand new screens with excellent resolution for video or color desktop publishing. Scenes of Bar Mitzvah, ceremonies at church, scenes of a wedding reception, a toasting glass at reception, symbolic wedding graphics, and more are featured. The volume (\$30) is available on four DCTV compressed 704 x 480 disks or six JPEG compressed 24-bit color data. Animate the screens with DCTV or load them in the Toaster

to perform video effects. *CeV Design*, 61 Clewley Rd., Medford, MA 02155, (617) 391-9224, Inquiry #234

### Wedding Bits 24

CeV Design has released Wedding Bits 24 (\$35)—a collection of DCTV animations targeted to wedding videographers using DCTV. The anims run from DeluxePaint 4 and portray millions of colors in real-time with real speed in sending to tape. Many are 3-D renditions that have a 3-D look in full color resolution of video. Designed in hi-res overscan, users can add titles easily to spruce up any wedding production. A spinning heart, toasting glass, flying Cupid, rotating cake, and dancing bride and groom are just some of the anims. An accelerator and 3-4MB of RAM are highly recommended by CeV Design when using Wedding Bits 24. *CeV Design*, 61 Clewley Rd., Medford, MA 02155, (617) 391-9224, Inquiry #235

### • Hardware •

#### SCSI Tower for A2000

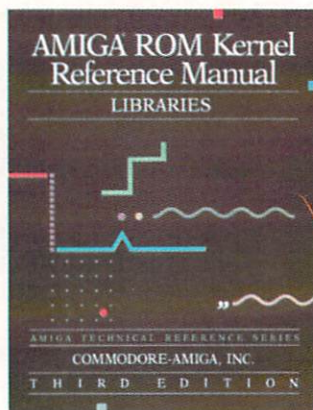
The SCSI Tower is an attractive Tower casing for the Amiga 2000. It's available in cream or charcoal black. Features include an LED speed indicator, read light, power light, front power switch, security lock, and an optional reset button. A Turbo button is also included for PC expansion. Four 5.25" height bays are accessible from the front. One 2.5" full-height internal, two 3.5" half-height internal, and one 5.25" half-height internal bays are standard. All parts to get the Amiga up and running are included. *Specialized Computer Systems International*, 2616 W. Missouri Ave., Phoenix, AZ 85017, (602) 265-1205, Inquiry #236

### • Books •

#### Amiga ROM Kernel Reference Manual: Libraries, 3rd Edition

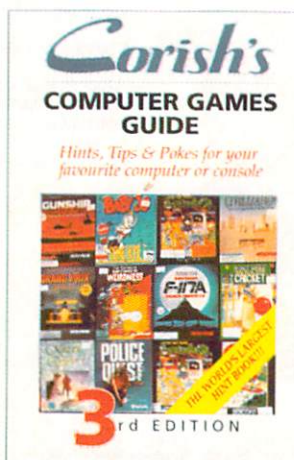
In release 2 of the Amiga system software, the system libraries have doubled. They have been separated from the system devices and

each will be covered in its own volume. This comprehensive tutorial (\$38.95) provides detailed examples of how to use the Amiga system libraries, including hundreds of new functions in the release 2 of the system software. *Addison-Wesley Publishing*, 1 Jacob Way, Reading, MA 01867, (800) 447-2226, Inquiry #237



#### Corish's Computer Games Guide 3rd Edition

This book (£14.95) helps on just about any game you care to name. It covers backdoor codes left by the programmers, cheats and tips to get past your opponents, how to skip levels, pokes for infinite lives, time, and other options. There are plenty of hints on adventure games—old and new—including full solutions for games from Infocom, Lucasfilm, Mindscape, Psygnosis, Sierra On-Line, US Gold, and others. *Kuma Computers Ltd.*, 12 Horehoe Park, Pangbourne, Berks, RG8 7JW, (011) 4473-484-4335, Inquiry #238



### The Fast Guide to Workbench

Vidia's latest book is aimed at the Amiga's graphical user interface, also known as Workbench. The Fast Guide to Workbench (\$8.95) covers Preferences, System programs, utilities, tools, commodities, hot key codes, fonts, gadgets, keyboard shortcuts, and other miscellaneous information. Also included is a 45-minute tutorial for users just starting out with computers, and blank function key and numeric keypad overlays for making your own quick reference templates. Vidia, P.O. Box 1180, Manhattan Beach, CA 90266, (310) 379-7139, Inquiry #239

•AC•

### How to get your products listed in New Products and Other Neat Stuff

Send a descriptive press release and two copies of the software or hardware. Please include product name, price, company name, full address, and telephone number. Our mailing address is: PiM Publications, Attn: New Products Editor, P.O. Box 2140, Fall River, MA 02722-2140. For UPS and Federal Express, our address is: PiM Publications, Attn: New Products Editor, 1 Currant Place, Currant Rd., Fall River Industrial Park, Fall River, MA 02720-7160.

New Products and Other Neat Stuff is compiled by Timothy Duarte



# REVIEWS

## MegageM's CellPro

by Merrill Callaway

This article was difficult to write, but not because *CellPro* is arduous to use; quite the contrary. The reason I had such hard going was that whenever I started to write about CellPro, I'd test out some feature, and I'd try just a few ideas, and look up at the clock, and it would be four in the morning! I continue to get lost in the fascinating features of this little program. You will too, if you have ever enjoyed the "Mathematical Games" column in *Scientific American*, or if you just like interesting patterns.

### Real World Uses of CellPro

Don't be fooled by the simple interface or the inexpensive price. This is a sophisticated tool, capable of supplying endless hours of satisfying entertainment. Even though CellPro is fun, it can be used for serious mathematical research in the field of Cellular Automata (CA) because it allows complete control for making custom CA rules. Results may be saved automatically as animations for further study. CellPro will be welcomed by any teacher from kindergarten to university level. CellPro has a universal visual appeal quite independent of anyone's "love of mathematics." In fact, it may help some people get over their "fear of math." However, CellPro is not just educational.

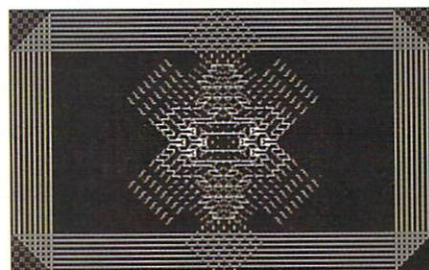
If you do presentations or video, why should you buy—for more money than CellPro costs—a disk of someone else's patterns and backgrounds when you can have so much fun generating your own endless supply? CellPro features automatic, numbered file saving and a MakeAnim program to put together ANIM5 files playable in *DeluxePaint* or with *ShowAnim* (included). You can make very unusual animated logos for video using this program. Fascinating transition slides for presenta-

tions are easy: Run a slow animation of several generations of a CA between your other slides.

I find that "recreational mathematics" programs such as CellPro and *FractalPro* (MegageM), and *MathVision* (Seven Seas Software) are workhorses for making interesting and unusual backgrounds and illustrations. I use my "math pix" alone as illustrations, add color text to them with *DeluxePaint IV* (Electronic Arts), and also use them as starting points for all sorts of computer paintings. For instance, I had fun making the illustration for my June ARexx column in *MathVision*, and I'm trying patterns generated in CellPro for custom silk-screened "designer cloth."

### Knowledge of Mathematics: Not a Necessity, But Helpful

Just what kind of program is CellPro, anyway? The program is so simple to use that you need not know any mathematics to enjoy the patterns and animations it can generate. If you know something of the mathematical "Game of Life" or have studied "Cellular Automata," you can go deeply into designing your own custom CA rules. Let's look at "Life." "Life" is only one of CellPro's featured CA, but "Life" illustrates the general principles of Cellular Automata.



Generate your own patterns and backgrounds or use the supplied screens in your creations.



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## "Life": Simple Rules, Unpredictable Results

Cellular Automata arrived in mathematics fairly recently. John Horton Conway, a legendary British mathematician from Cambridge, now at Princeton, invented the so-called "Game of Life" in 1970, the first cellular automaton. This computer game was

introduced to the public in 1971 by Martin Gardner in *Scientific American*. "Life"'s rules are deceptively simple; in fact, Conway sought the simplest rules that would make the resulting events rich with unpredictability. Conway and his students did thousands of calculations, and filled acres of triangular, square, and hexagonal lattices with poker chips, before finding a viable balance between "life" and "death." They came up with the "Game of Life."

## Life and Death of the Cells

The game is based upon "cells" in a square grid. Think of a very large piece of graph paper. Put a dot in one of the squares. That dot occupies one "alive" cell. If the cell is "dead," then it is empty of a dot. Each cell is surrounded by eight neighbors, North, East, South, and West of the dot, as well as NE, NW, SE, and SW of it. Initially, each cell in an infinite grid of cells can be alive or dead. The rules tell us whether any particular cell is alive or dead based upon the state of life or death in its eight neighbors. All changes to every cell in the grid occur simultaneously in each "generation." In CellPro jargon a "Designer8" type CA means all eight neighbors bear upon the "result": whether that cell is "alive" or "dead" after each generation. When only N, E, S, and W neighbors affect the center cell, these are "Designer4" CA. You may use the "Designer4" and "Designer8" menus to try your own custom CA rules. This makes CellPro a useful tool for genuine mathematical research in cellular automata. Conway would love it!

## The Amiga Screen Represents the Grid

Birth and death happen during one "screen refresh," which stands for a "generation" in the "Life" game. We just made the logical leap to the computer screen approximating the grid, and the state of its pixels as black (dead) or white (alive) standing for the cell states. If we start with some kind of pattern of live (white) cells (pixels) on a dead (black) grid (screen), and apply the rules through a program, then we should see a pattern evolving over time. What are "Life"'s rules? If a cell has exactly two alive neighbors, then nothing happens to it: if it's alive, it stays alive, and if it's dead, it stays dead. Three living neighbors make the cell stay alive if already alive or come alive if dead, sort of like having three parents. All other "neighborhoods," with 0, 1, 4, or more living neighbors produce death in the center cell. It dies either of "loneliness" or "overcrowding"—appallingly realistic, don't you think?

You have to witness CellPro in action to realize how fascinating this game can be. The original uses only two states: white or black. CellPro has a refinement, called "Shadow" in the "Math" Menu. Shadow causes the program to "push" (save) previous generations on to the bit plane(s) below the top bitplane. This effectively transforms the Life output into as many colors as you want: 2, 4, 8, or 16, the maximum number of colors CellPro supports. Shadow adds to an already organically squirming display, color shadows of the previous generations, also squirming. Other games in CellPro always use 16 colors.

## The Interface and Manual

The menu-driven interface is serviceable but spartan, with no attempt at the "2.0 look." Most commands have keyboard shortcuts. Once the program is started from the CLI or the Workbench, it starts drawing in the "Modular" CA. CellPro has two programs on disk: "CellPro-OS" for overscan (352x240) and "CellPro" for regular (320x200) lo-res 16-color screens. CellPro has two modes: "Draw" and "Pause." While in "Draw" mode, nothing in the menu works except "Pause." There are several ways to toggle between the two, my favorite being simply clicking the left mouse button. The beauty of this is that you can start drawing in one CA and pause, reset some parameters in the menu, or even switch to a new CA, and continue drawing on the original image



Easily create colorful graphics such as this sample screen.

(continued on page 24)



## Origins — genealogy database

NEW PROGRAM!



**Origins** is a dedicated data base for keeping track of genealogical information. It will support databases of over 6 million individuals. The user interface is designed to be both easy to use and very powerful. **Origins** will correctly handle multiple marriages, step-children, unmarried parents, and other difficult situations that some programs refuse to allow. Lists Persons, Marriages, Parent/Child Index, and Soundex. Generates reports on Person, Family Group sheets, Pedigree Chart, Descendants Charts, and Tiny-Tafel. Features include:

- ☛ Automatically call your AREXX compatible editor to create Source and Note files. These files may also be written and displayed in hypertext format.
- ☛ Support for IFF files. Pictures of individuals, marriages, baptisms, and family groups may be displayed instantly.
- ☛ Generate Tiny-Tafel listings for use on the National Genealogy Conference.
- ☛ Search on any combination of fields or by Soundex codes.
- ☛ Many useful AREXX functions are included.
- ☛ Import and export data between Origins and other genealogical programs using the GEDCOM file format.
- ☛ Context-sensitive hypertext help is built in.

**Origins** requires V1.3 or later of the Amiga OS, at least 1 megabyte of ram and 1 floppy drive minimum configuration. A single floppy data disk will hold approximately 2000 person and 500 marriage records. Suggested retail price: US\$85

## ReSource — V5 macro disassembler

**ReSource** is an intelligent interactive disassembler for the Amiga programmer. **ReSource** is *blindingly* fast, disassembling literally hundreds of thousands of lines per minute from executable files, binary files, disk tracks, or directly from memory. Full use is made of the Amiga windowing environment, and there are over 900 functions to make disassembling code easier and more thorough than its ever been.

Virtually all V2.0 Amiga symbol bases are available at the touch of a key. In addition, you may create your own symbol bases. Base-relative addressing, using any address register, is supported for disassembling compiled programs. All Amiga hunk types are supported for code scan.

**ReSource** runs on any 680x0 CPU, but automatically detects the presence of an 020/030 CPU and runs *faster* routines if possible. **ReSource** understands 68030 instructions and supports the new M68000 Family assembly language syntax as specified by Motorola for the new addressing modes used on the 020/030 processors. **ReSource** and **Macro68** are among the few Amiga programs now available that provide this support. Old syntax is also supported as a user option.

An all new online help facility featuring hypertext word indexing is included. This enables you to get in-depth help about any function at the touch of a key! **ReSource** includes a new, completely rewritten manual featuring two tutorials on disassembly, and comprehensive instructions for utilizing the power in **ReSource**.

**ReSource V5** will enable you to explore the Amiga. Find out how your favorite program works. Fix bugs in executables. Examine your own compiled code.

"If you're serious about disassembling code, look no further!"

**ReSource** requires V1.3 or later of the Amiga OS, and at least 1 megabyte of ram. **ReSource V5** supercedes all previous versions.

Suggested retail price: US\$150

## Macro68 — V3 macro assembler

**Macro68** is the *most* powerful assembler for the entire line of Amiga personal computers. It supports the entire Motorola M68000 Family including the MC68030/40 CPUs, MC68881/82 FPU's and MC68851 MMU. The Amiga Copper is also supported, eliminating the need for tedious hand coding of 'Copper Lists'.

This fast, multi-pass assembler supports the new M68000 Family assembly language syntax, and comes with a utility to convert old-style syntax source code painlessly. Old-style syntax is also supported, at slightly reduced assembly speeds. **Macro68** is fully re-entrant, and may be made resident. An AREXX interface provides "real-time" communication with your editor. A shared-library allows resident preassembled include files for incredibly fast assemblies.

Most features of **Macro68** are limited only by memory. It boasts unparalleled macro power. There are many new and innovative directives. A special structure offset directive assures compatibility with the Amiga's interface conventions. A frame offset directive makes stack storage easy. Forward and backward branches, as well as many other instructions, may benefit from a sophisticated N-pass optimizer. Full listing control is standard. A user-accessible file provides the ability to customize directives and run-time messages.

**Macro68** is compatible with directives used by most popular assemblers. Output file formats include executable object, linkable object, binary image, and Motorola S records. **Macro68** requires at least 1 meg of memory. Suggested retail price: US\$150

Buy **Macro68**  
and **ReSource**  
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\$30 off!

## fingerTalk — fingerspelling tutor



**fingerTalk** will help you communicate with hearing impaired persons, and is useful anytime silent communication is needed. This interactive program will teach fingerspelling (hand-signs for letters and numbers) to both adults and children. There are 5 different modes to help you to learn quickly. Suggested retail price: US\$35



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# Prolific Inc.'s Pro-Net 2.0/Pro-Board 2.0

by John Iovine

Prolific Inc. offers a line of schematic capture and Printed Circuit Board (PCB) software. Originally *Pro-Net 2.0* and *Pro-Board 2.0* packages were sold separately for \$475 each. Currently these programs can be purchased in a package bundle for \$299 complete.

The two programs can work independently or together to help you create electronic printed circuit boards.

## Overview

A schematic capture program, such as *Pro-Net 2.0*, allows you to draw schematic diagrams of electronic circuits. The drawings created with this package look great and are on a professional level. When you have completed a schematic, you can then create a Net list for the schematic in the post-

one hard disk. It comes on four unprotected floppy disks, with a spiral-bound manual.

The program starts up with a 640 x 400 screen. At the bottom of the screen is a row of 10 keys. These keys correspond to the function keys on the Amiga keyboard. Prolific has named them IFKs for Intelligent Function Keys. The functions can be initiated by either pressing the key on the keyboard or clicking the key with the mouse pointer.

Selecting a function key usually brings you down a level in the program, at which point the function keys are redefined to display a new set of options. Pressing the ESC key brings you back up a level.

Drawing on the screen is pretty easy. In the drawing mode, the mouse pointer is replaced with crosshairs. It's a good idea to keep the grid display and snap on when in the drawing mode. Doing so forces you to place components and lines on the grid points. Having the components aligned on the grid makes it easier to draw connecting lines between component pins.

By selecting the IFK "Device" key, you may access *Pro-Net's* libraries of electronic components. At this level you may call up

sets the component in place. The right mouse button is used to delete a component. Other options are available such as Move, Copy, and Rubberband. When placing a component on the screen, *Pro-Net* automatically generates a device number for each component, such as U1, U2, etc. You also have the ability to add text, label lines, and pins with signal names.

When you are finished, save the schematic. Then return to the top system level and enter the "Post" processing subprogram in *Pro-Net*. Here is where you generate the Net list. You can also generate a Bill Of Materials (BOM) and a Signal and Component cross-reference, as well as perform error checking. It is always a good idea to generate a BOM with the Net list. The BOM lists each component used in the schematic, and this becomes valuable when using the Net list in *Pro-Board*.

When the BOM file is printed, you get a list of all the components used in the schematic. You use this component list to place Solder Pads, Dips, and Sips on the screen in *Pro-Board*. If you do not have the

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## The two programs can work independently or together to help you create electronic printed circuit boards.

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processing section of the *Pro-Net* program. A Net list is a special ASCII file that lists all the connections between the components and devices used in the schematic diagram. The Net list generation is the main reason that you use a schematic capture program. Most drawing and general CAD programs can create reasonable schematic diagrams, but they cannot generate a Net list. The Net list is used later in a PCB program (in our case *Pro-Board 2.0*) to help generate the copper traces between components on the printed circuit board. This method is much faster and less prone to error than doing the copper traces by hand.

## Pro-Net 2.0

The *Pro-Net* program is an Amiga-specific schematic capture program. The name *Pro-Net* stands for "PROfessional NET list generator." *Pro-Net 2.0* requires about 1MB of memory, and two floppy drives or

any device into the schematic diagram you are working on. "Devices" is a generic name used for electronic components such as transistors, integrated circuits, resistors, capacitors, etc. The components are divided into separate libraries named TTL, MTTL, MOS, VLSI, Discrete Components, and User. If the device, or component, you need does not exist in any of these libraries, you can create the component using existing graphic symbols and/or a simple CAD subprogram.

The CAD subprogram allows you to enter the electrical characteristics of each pin when creating a new component. If you decide to do so, the program can calculate a few electrical parameters for you, such as the power requirement of the circuit.

In *Pro-Net* you can use the mouse to place a component anywhere within the drawing. You may rotate the component by 90-degree increments using one of four IFKs on the bottom line. The left mouse button

proper number of pads on the screen, the Net list will not load and you'll get an error message.

## Pro-Board 2.0

*Pro-Board* is an Amiga-specific PCB layout program. The name *Pro-Board* stands for "PROfessional pcBOARD generator." It can be used independently to generate PCBs, or in conjunction with *Pro-Net's* Net list. The Net list helps guide you in making the copper traces between components, and also verifies that the board design matches the schematic diagram.

*Pro-Board* comes on a single 3.5-inch disk with a spiral-bound manual. *Pro-Board* is similar to and works in the same way as *Pro-Net*. It uses IFKs at the bottom of the screen. The libraries in *Pro-Board* contain solder pad patterns for various devices (components). As in *Pro-Net*, if the pattern you require is not in the library, you can



create or modify an existing pattern. Pro-Board can create a one- to four-layer PCB. However, the four-layer construction does not allow traces on the inner layers. These two layers are used exclusively for the ground and power supply.

When starting Pro-Board you will be prompted for the name of the design, number of layers, size of the board, and a few other variables.

You begin by entering the Place mode, where you place solder pad patterns on the screen. If you are using a Net list, each pad pattern should represent a component in the Net list. This is where the BOM is useful. The program checks the pad patterns against the Net list and informs you of any errors.

If you are successful and there are no errors, you have the option of a "rat's nest" view of the wiring. The rat's nest view shows all the connecting lines between components. By using this option, you may see a better way to rearrange the pad patterns to minimize the length and crossing of the copper traces between components. If you decide to rearrange, you can back out and move up a level using the ESC key, re-enter the Edit mode, and move the pad patterns.

When you are ready to route the board, you select guide. The program draws unrouted lines between the component solder pads, where copper traces are needed. To set a trace you click on one end of the line at the solder pad using the mouse, then the opposite end. The program then routes a copper trace between those two points. Unfortunately, the unrouted line remains on the screen after the routed trace is com-

pleted. If the trace connects to more than two component pins, keep repeating the procedure until all the routing is finished. It would have been a good idea to have the unrouted lines disappear once that portion of the trace is routed, because it can become difficult to see if you have finished a particular section of a trace on complex routes. Once you have finished one trace you move on to the next one, until the board has been completely routed.

You can set the program to route on the top (component side) or bottom (solder side) layer. Pro-Board also has an auto-layer option where the program automatically chooses the layer on which the trace is routed.

Pro-Board has a plotting and printer output to get a hardcopy of the PCB. The printing functions are in a separate program on the disk called Plot-Board. The dot matrix printer function isn't as good as I would have liked; it appears that I can get it to print only at 2x scale. While this is OK in a general sense, e.g., to check wiring, it doesn't help in checking new pad patterns. In order to check pad patterns you must reduce the drawing output by 50 percent. I suppose that if you have a plotter this would not be a problem.

The most important aspect of this program is the Gerber files. Gerber files are standard in the PCB industry. These files can be uploaded or sent on disks to PCB companies for quotations and manufacturing of the PCBs. The one hang-up with the Gerber files is that they are saved on Amiga-formatted disks, while the PCB industry uses these files only on IBM-compatible disks. You have two options to make the files

useful. One is that you upload the file by modem to the PCB house. The second is that you purchase a Cross-Dos utility program that allows you to create and save the file on an IBM-compatible DOS disk.

Although Cross-Dos packages are selling for \$25 in software houses, it still adds a nuisance factor. It would have been better if the Prolific package had a utility subprogram or saved its files to IBM-readable disks.

## Conclusions

Overall, these programs are well worth the money. My biggest complaint with them is the manuals. The manuals do not clearly show you how to operate the programs successfully. They desperately need a few simple tutorials that show the main features of the programs as well as how to use and access them.

I spoke to a Prolific representative who assured me that they are well aware of this problem and plan to include a small tutorial manual in the near future.

In lieu of the improved manual documentation, you will need to rely on technical support from Prolific. The customer service response is pretty good. If you get stuck with the program, they will call you back and help you through whatever problem you have.

**Pro-Net/Pro-Board**

**Prolific, Inc.**

**6905 Oslo Circle, Suite 3**

**Buena Park, CA 90621**

**(714) 447-8792**

**Inquiry #202**

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# Migraph's Optical Character Recognition

by Rich Mataka

## OCR Theory

Optical Character Recognition is the process whereby printed text is electronically converted into computer-readable files. Instead of typing files by hand, a scanner is used to input the text. The scanner's function is to convert the object into a bitmap of black and white dots.

When the text you have scanned appears on the screen, it is an exact duplicate of the original. However, to the computer, the letters are black pixels that are grouped together. The computer does not have the ability by itself to distinguish one character from another when images are first scanned.

OCR software allows these groups of pixels to be distinguished as letters. The *Migraph* OCR is based on the *Omnifont* technology which uses a mathematical definition to identify the character that has been scanned. This process identifies letters more quickly and accurately than any other process.

Migraph has included 20 pretrained typefaces with the OCR software. Thereafter, the user creates his own dictionaries (i.e., libraries) of trained characters. It is better to train the OCR software for a particular document rather than a specific typeface. By training the OCR software to read the documents that you are interested in scanning, there will be a higher rate of success of character recognition.

## Software Installation

Installing the OCR software is easy. *Migraph* has included an excellent installation program which guides you step-by-step through the process. All you really need to do is decide on which hard drive you wish to place the software. The installation program does the rest. The *Migraph* OCR can be used with a number of different scanners. You can check with *Migraph* to see if your Amiga scanner is one of those that can be used with this package. Or, you can use an IFF or TIFF files from the scanner.

## Usage

Once you grasp the theory behind OCR, using it is a breeze. The first step is to obtain an IFF image in memory. To scan this IFF image you can use the OCR software scanning function or one of the other products from *Migraph*, such as *Scan and Save* or *Touch-Up*. You can select the length and orientation of the image to be scanned right from within the OCR software. Following the scanning process, it is a good rule to set or check the program options. This is done through the use of the OCR Control Panel (Figure 1). From this panel you set all of the program options and the way in which the software will interact with the image that is on the screen. You can also select the name of the text file that will be output, once the OCR software has finished interpreting the image. The Scanning dialog box and the Control Panel are two of the major panels you will work with in the OCR program.

After you have set up the program defaults and scanned an image or loaded a file, it is time to define a text region to be interpreted. Defining a text region is done by either using a Rectangular Clip Box or by selecting the Polyline icon (Figure 2). The Rectangular Clip Box is self-explanatory. The Polyline allows you to draw selectively around text. Additionally, you can have more than one text box defined on a screen at a time (similar to columns). The OCR program will follow the columns, recognizing characters as it finds them. Also, there is an option within this program to combine a

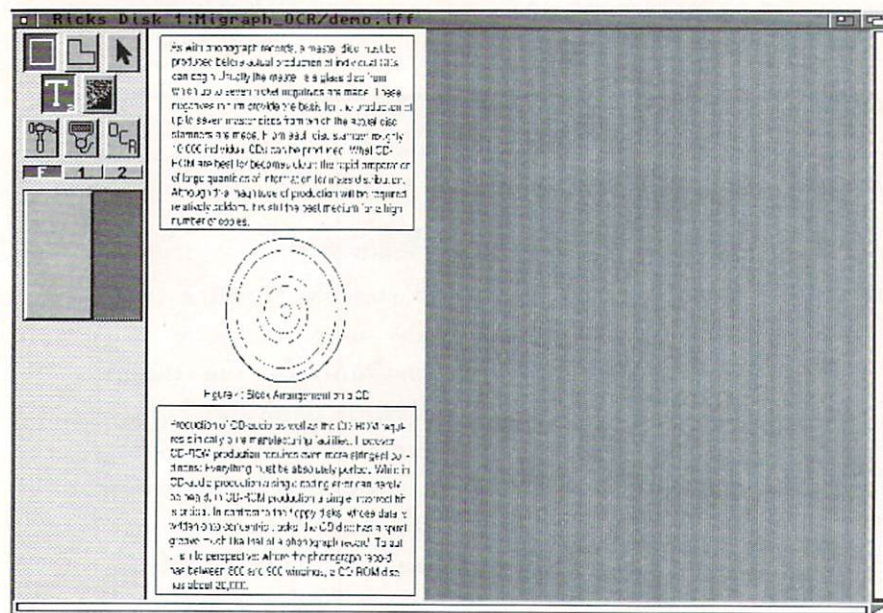
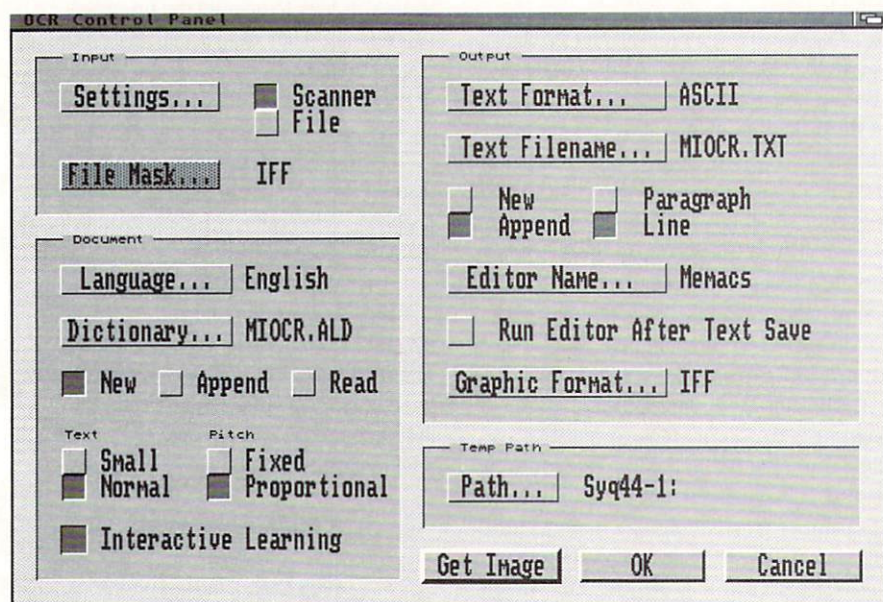


Figure 1, OCR Control Panel, and Figure 2, Defining a text region



number of irregular boxes into a single large box. This process of "Combining Clip Boxes" is a useful feature of the Migraph OCR software.

## OCR Processing

Two types of OCR processing can be performed with the Migraph OCR software—Automatic OCR and Interactive Learning. The differences in speed between the processing types is highly noticeable. When you have chosen the Automatic mode, there is no interaction with the user. In Automatic mode, the OCR uses its best guess for a questionable character. When it has no guess for a character, such as when two characters touch, the program replaces the unknown character with a @ symbol. Any corrections to the file would have to be done in the user's word processing software or with a text editor.

The Interactive Learning process option may take longer, but it is more accurate. This process provides the user with the opportunity to identify unrecognized characters, correct mistakes, and train the program to recognize the new characters. As you train the OCR software, the recognition rate increases and the software's interactive questioning decreases. I suspect that normally a user would select the interactive learning process unless he has a dictionary that has been thoroughly defined and the user always translates the same style of text using that dictionary. The Interactive method will take longer, but it allows you to correct mistakes as they are encountered with the OCR software.

## Summary

Once again, Migraph has met and conquered user expectations. To use the OCR software you will need at least 2MB of memory and a hard drive. Migraph's Merge-It software makes it possible to scan 8 1/2" x 11" pages and have the OCR software translate the data from image to text. These innovative products make the Amiga a legitimate contender in the DTP industry. Migraph has proven that complex software does not have to be complex to use.

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Migraph, Inc.  
32700 Pacific Highway South  
Suite 12  
Federal Way, WA 98003  
(206) 838-4677  
Inquiry #203

## MicroBotics' VXL 30 Accelerator

by Jimmy Rose

Processor accelerators are one of the most desirable additions you can make to your Amiga, allowing much faster execution of programs such as word processors, databases, utilities, and even some games. They are almost a necessity for graphics applications like 3-D modeling, ray tracing, and video work.

Amiga 2000 owners have a wide variety of products from which to choose. The choice for A500 owners, however, is much more limited. This is especially true if you want to add a 68030. Until recently, the only 68030 accelerator available for the 500 was CSA's Mega Midget Racer. Now MicroBotics has introduced the VXL 68030.

The VXL accelerator is available in several configurations: a 25MHz 68030, a 40MHz 68030, and a 50MHz 68030. Each board can also have an optional 68881 or 68882 math chip. Note that while there is a big difference in the price between the 68881 and 68882, there is only about a 10-percent performance difference in the two chips. You may also choose between a standard 68030 or the economy model 680EC30. The only difference between the two is the lack of a memory management unit in the 680EC30. Unless you plan on running UNIX applications on your Amiga, you should go with the economy model, as there is no difference in performance. Commodore does not support the MMU, thus it will make no difference in any Amiga software. Accompanying the package are a floppy disk containing various utilities and three letter-sized pages. The first page is the installation instructions, the second page contains configuration and chip installation notes, and the third outlines general operation and contains instructions for the included software utilities.

The VXL 30 comes with a bootable floppy disk that contains two useful utilities and an update file. Be sure to read the update file as it contains information not included on the instruction sheets.

The utility programs Setcpu and Setvxl are almost identical in function. They allow you to examine the current configuration and make changes such as turning the data and instruction caches on and off or enabling

burst mode on the 32-bit RAM board (if installed).

## Compatibility

Setvxl also allows you to switch from 68030 mode to 68000 mode or vice versa. Whatever mode you're in, doing a warm reboot will reset the machine in that mode. For example, if you have the board configured to come in 68030 mode from a cold boot and you switch to 68000 mode, doing a warm re-boot from the keyboard will reset the machine in 68000 mode. If you want to return to 68030 mode you can double click on "goto 68030" or turn off the machine for a few seconds and turn it back on.

The 68000 mode is 100-percent compatible with the configuration you had before the VXL was installed, so you don't have to worry about any of your software not working after the installation. If it worked before, it will work with the VXL board in 68000 mode.

However, the 68030 mode is another story. The first major problem I encountered when I attempted to boot in 68030 mode was a red screen telling me I had a bad board installed in my system. The manufacturer number indicated it was the Supra memory board located in my Supra 500XP hard drive. I was still able to boot up in 68030 mode, but the system refused to recognize the 512K inside the drive.

There was no compatibility problem with the hard drive itself, just the memory. I found this rather strange since the 512K memory module I have on the inside of the computer is also a Supra board, and there was no problem between the VXL and this board.

I telephoned MicroBotics and they were already aware of the problem. Their customer service assured me that both they and Supra were working on the problem. I inquired if there were any problems with other hard drives and was informed that the only other incompatibility problem was a similar situation with Interactive Video System's Grand Slam board. However, IVS already has a fix in the form of a new ROM chip for their card. They will make the update free of charge, but you must ship them your hard drive. If you purchased your Grand Slam in the last three or four months, it is likely that you already have the newer version. Open up the case and look at the right side of the board. You will see a ROM chip labeled with the numbers 74F86 or 74AS86. If yours has 74AS86, then you have the latest version. I did test the VXL with the Grand Slam 500 and 2MB of memory



installed. The system performed flawlessly.

I want to make it clear that the problems with the Supra hard drive exist only in 68030 mode and that everything functions normally in 68000 mode. In all fairness, I should point out that the Supra 500XP has the same incompatibility problem with the Mega Midget Racer.

## Performance

How much difference will the 68030 make? It depends on your exact system configuration and on the programs you will be running. The 32-bit expansion RAM board was not yet available at the completion of this article, but should be shipping by the time you read this. Speed increase listed here is solely dependent on the CPU. Adding the 32-bit RAM board should increase the performance of the VXL accelerator considerably.

The unit tested was a 25MHz 680EC30, and it certainly made a difference in program execution for most applications. Screens snap open and update much faster. *Professional Page* and *Superbase4* zip right

along with almost instantaneous screen updates. *DeluxePaint IV* performs functions like fill and rotate three to four times faster and power-packed files decompress instantly.

Unlike the Mega Midget Racer, the VXL doesn't include any utilities to measure performance. I used the public domain program *Mips* to measure millions of instructions per second. In 68000 mode the Amiga showed 0.7 mips. In 68030 mode it clocked in at an impressive 6.3 mips. I then timed how long it took to compress a full 3.5-inch floppy using another public domain utility, *The Disk Masher (DMS)*. In 68000 mode it took 15 minutes and 41 seconds to read the disk and write the output file to floppy. In 68030 mode the same task was performed in 8 minutes and 14 seconds, an increase of nearly 50 percent.

Naturally, some games will not work with the 68030. However, I was amazed at the number of games that did work. Flight simulators, like *Battle of Britain*, and racing games, like *Indy 500* and *Nascar Challenge*, offer much improved performance in the

form of noticeably faster screen updates, approximately 30-percent faster in most cases.

## Conclusion

If all you do with your Amiga is play games, then an accelerator seems a bit extravagant, unless you feel it is worth \$400 to see a 30-percent speed increase in your favorite flight simulator. However, if you do almost anything else with your computer, you'll certainly benefit from the increase in productivity. The VXL accelerator definitely makes life much easier.

VXL 30  
MicroBotics, Inc.  
1251 American Parkway  
Richardson, TX 75081  
(214) 437-5330  
Inquiry #204

## —CellPro continued from page 18

with the new settings. One of my favorite discoveries is to start in "Modular" CA, draw only two generations and pause—you have to be quick to click—then switch to CA "Replicate," and draw. If "Shadow" is set to "1" (4 colors), the resulting patterns transform through intricate oriental rugs, Indian designs, Greek mazes, berserk checkerboards, and all sorts of fanciful, but highly geometric patterns. There are infinite possibilities for making patterns. Most of my fun comes from discovering new ones. The hardest thing is deciding which ones to save; I found them *all* interesting!

The 28-page manual is well written, but contains no index. Most of the operations are easy to master, and there are tutorials. I would have liked more information and theory on the design of a CA. While the formulas are included, it would be edifying to have a little more general information as to *why* and *how* rather than just *what*. There are plenty of examples of CA designs to experiment with, however, and there is a reference bibliography.

## Designing Games

Choose "Design" instead of "Shadow" in the "Math" menu, along with "Designer8" or "Designer4" in the "Project" menu. A window then opens that allows custom designing of the rules for your own game.

A 3 x 3 cell grid and a slider which chooses all possibilities for neighboring cells automatically enable you to choose CA results by simply clicking on the "result" and/or "center" square for each combination of neighbors. There are also numeric controls that affect two of the Project Menu's CAs: "Modular" and "Cyclic." Using them is easy, but understanding them is not.

## Conclusions

Despite the "1.3 look" interface and the lo-res screen, this program is one of my favorites. I can't remember the last time a program kept me up all night. CellPro is excellent entertainment. CellPro provides an inexhaustible source of interesting abstract or geometric designs for art, animations, presentations, or backgrounds.

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Santa Maria, CA 93454  
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Inquiry #201

**If you would  
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02722-2140**



# MULTI-COLORED TEXT IN DPAINT III

by George Haasjes

There are two ways to create multi-colored text in *DeluxePaint III*—not including ranging and manually filling letters—and I will start with the simplest method first. It offers limited options because of the way the brushes are copied and the way text is displayed. Nowhere in the manual is this technique explained. I am not referring to the ranging option to accomplish this, nor to the method of using the polygon tool and laboriously filling in each letter. This method assumes some familiarity with *Digi-Paint*, but even if you're a new user, following these steps should provide you with some creative ideas.

## A Starting Point

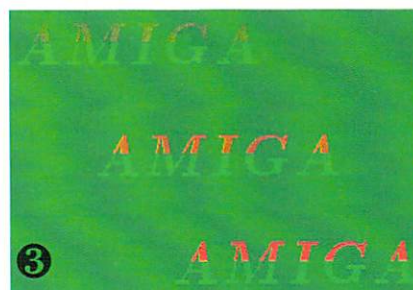
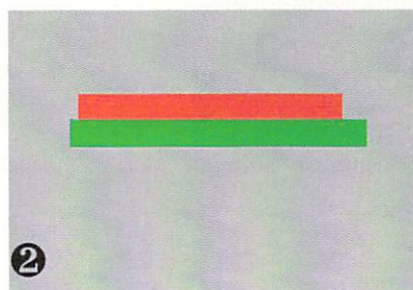
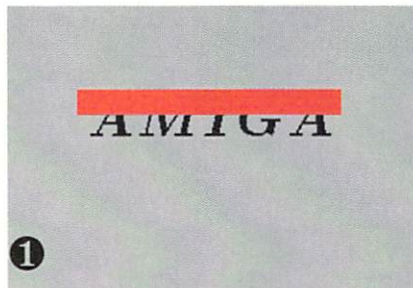
After loading the program, leave the setting on normal, and the screen at 320x200, and select any color for the screen. Here I have selected the light gray, and cleared the screen. Press and hold the right mouse button, then pick, picture, clear. Second, select the small brush shape with the small brush size; it is easier to work with for now. Third, click on text and then click on smoothing. For our example, click on the fonts icon, and from the PaintBench disk select cinnamon 41. Now type in AMIGA in capitals, choose black for the text color, and click on the paint brush next to the text entry. This will generate your text in unexpanded lettering. Press the right mouse button and, from the brush-swap menu, select "copy this brush." Notice how the text has expanded? Explanation later. Now stamp this down anywhere on the screen. Then press and hold the right mouse button and select brush; click "no background" and click "copy this brush" from the brush-swap menu. What you should have on the screen is your text in black on a light gray screen, with the text copied as a brush with the "no background" turned on. We are now ready to color the text.

Click on tools and select a color. In this example I've selected red for the top of the text. Click on red, the rectangle, and fill. Using the text on the screen as a coloring template and going all the way across, fill in the top half of the text, as in Example 1. For the second color select bright green and proceed to do the same to the bottom, as in Example 2. Notice that the size of the rectangles makes no difference for our purposes.

Now for the interesting part. We're only four clicks away from the result. First, click the right mouse button and select brush-swap,

restore brush. Second, move the restored brush up on the colored text template and click on it. If nothing seems to happen, don't panic. Third, move the cursor to scissors, click once, and then click repeat. Move the cursor onto the screen, and you should have colored text. Before copying the colored text as a

brush, turn the "no background" off, then select "copy this brush." Now you can pick any color you want, clear the screen, and use the brush you just created. You can manipulate this brush as you would any other using texture mapping, transparency, and other features.



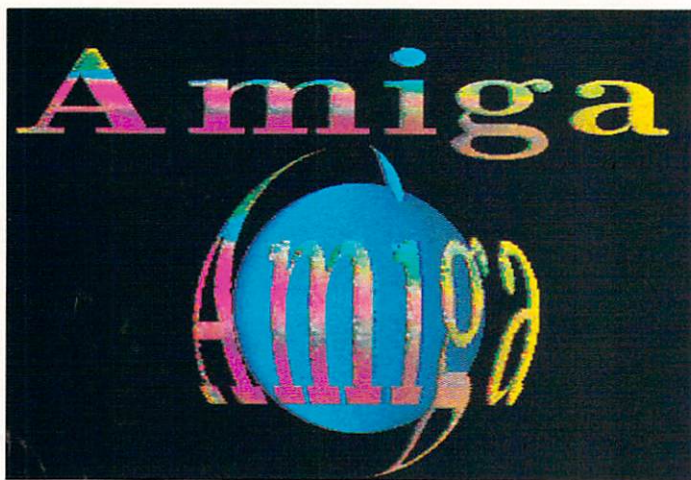
Examples 1-6: Easy steps to multi-colored text.



## Using What We've Created

For Example 3, leave the brush as is, pick the dark green, and clear the screen with this color (press and hold the right mouse button, then pick picture, clear), leaving the screen dark green. Click on the controls icon, set the transparency control about six clicks from the bottom on each side, and stamp your brush down anywhere in the upper-left corner. Next, move the transparency controls to the center, move the brush to the middle of the screen, and stamp (click) the brush down. Push the controls all the way up (click on the lower left squares to clear the screen), move the brush to the lower right of the screen, and stamp again. You should now have Multicolor Text, with a fade, on your screen, as in Example 3.

A note on this first technique: if you stamped the *finished* brush down on any colored screen, and then copied it with the scissors and rectangle, you would pick up the background color, whether the background was set to on or not. *Exception:* if the screen is black, and "no background" was on and you recopied the brush, all you would get would be the same brush. If the brush was texture mapped on a black screen with "no background" on, then you would get only the colored text as "texturemapped" text.



**Creative results can be achieved using these methods to color your text.**

## Problems With Fonts

The reason for the second technique is that when larger fonts are used, the fonts get clipped. Remember when the text got larger after copying the brush? If you use Texas Fonts, and you type AMIGA, you will get only the first four letters of the word. Yet the screen initially will display more than enough room for the word. Until you copy the brush, the first four letters will fill the screen. But there is a way around this. Using this method is a little different, but the advantage is that you can mix fonts and sizes for some really neat stuff, with no background hassles, and a full screen spread.

## The Second Method

Now on to our second method. First, delete the brush that was made. Second, set the screen to black and the controls (transparency) to off. Click on the text icon. Set the color of the text to white, select fonts, and pick Texas 103. Now type an uppercase A only. Click on the little brush icon; the letter A will appear after the corner of the screen fills with white. Copy this letter so it will expand; then place it on the screen as noted in Example 4. Now click on the fonts icon and select "melba 61," type in "mazing," and click on the brush icon again. Repeating what we did earlier, copy the brush to make the text expand. Now place the text as in Example 5. Next click on the fonts and select cinnamon 72. This time type in Computing, and again click the brush icon. What happened to the "ing"? If the text is copied, remember, it gets expanded. So don't copy it this time. Stamp down the text. Finish by typing the "ing" and placing it properly.

Now we want to click on the tools icon, click on the rectangle, and then the scissors icon. Press the right mouse button and select "no background" from the brush menu. Now copy the whole screen or the text involved. Make a copy of the brush. After the brush is

button. The text will turn white again. When finished—this is important—click *undo* first, then click on scissors, and finally on repeat. Your text should now be in the colors you've chosen. Turn the background off and save the text as a brush.

After saving the brush, clear the screen in any color, and restore the brush. Play around with the controls, texturemap it, or do whatever you want. The object now is to experiment.

## Observations

I found that if I were using white for the text color, it would pick up the remaining white if it was not completely filled in, as if it were part of the coloring processes. I also tried this method using different colors, and they all worked. What about using solid black text in multi-fonts and copying that without a black background? Well, I found that after creating the brush with "no background" set to on, and using the color white to create a screen, I could easily create the multi-font text in black. After creating what I wanted, I copied it and stored it as a brush. Then I cleared the screen in the color black, and restored the brush. It came up white again. I picked the color black without losing the brush. Then I stamped this down on the screen, and clicked undo, scissors, and repeat. There was absolutely nothing on the screen. You can click on any color you want for a screen color, then clear it. If you have left the brush alone, it will be in black under the cursor. Remove the "no background" and stamp it on the screen.

## Experiments

I have used fonts from the workbench disk as well as outline fonts from a PD disk, and all worked fine using this technique. I have used various screen resolutions with and without interlace and encountered no problems. I have also used a colored screen as a mask, and found that it works well.

For printouts, I've set the screen resolution to 384x386 and designed the layout. It makes a nice little newsletter heading or one-sheet poster. Importing these into *TurboSilver* or *Imagine*, and using these multicolored fonts as lighting (brushes) should be impressive. The possibilities seem to be endless. I hope that I've opened a door for somebody. I'm no artist, but perhaps put in an artist's hand, this technique can go who knows where. I would appreciate hearing from those who find this useful.

•AC•

Please Write to:  
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safely stored, we will color the text in the same manner that was used in the earlier example, except that we'll be using the transparency controls for effect.

Select the polygon tool from the tools menu, make sure the fill is highlighted, and then click on the controls icon. Now set the sliders on the transparency controls, the right one down to the middle, and the left one three or four clicks down from the top. Pick any color you choose to start with—it doesn't have to be the same colors I've selected—and cover the text in triangles or any other shape you desire (Example 6).

When done, restore the brush, place it over the colored template as close to the original as possible, and then click the left mouse



In a previous *Amazing Computing* article (*Dithering in Modula-2: Dithering Primitives*, AC 7.9), I discussed a relatively simple technique to dither colors algorithmically using standard Amiga graphics calls. In this article, I'd like to expand on the functionality of those routines. Here, we're going to discuss an algorithm which will match an arbitrary color to an arbitrary palette. Using this routine, one could re-map a 24-bit image to a smaller palette, or simply remap the colors from one palette to another. Please note that this article expands on concepts and models used in the original article.

### Color Match

The Color Match routines presented here will take as input the RGB values for a color and match it to its closest counterpart (either a pure color or a dithered color) on a supplied palette. How can we do this? We have to create some rules to determine which color is "better" than another when attempting to match it to a color which may not be in our palette. Here are my suggestions:

1) It is better to use a pure color than a dithered color. This is intuitively obvious because only one pixel is required to display a pure color; a dithered color requires two (using the model discussed in the article *Dithering Primitives*).

2) It is better to use a color whose red, green, and blue values all vary by a small amount from the original, rather than a color which has a large change in just one of the RGB components. Why? If each of the RGB components of two colors differs by, say, just 1, then both colors are essentially the same, except that one is a lighter shade of the other. If only the red is changing, then the two colors have more fundamental differences.

3) It is better to use a color whose RGB values differ in the same direction; i.e., all the RGB values of the color are either greater or smaller than those of the color we are attempting to match. If all the RGB components change in the same direction, then they are shades of each other; otherwise, there are larger differences.

4) To find the pure RGB equivalent of a dithered color, add each of the RGB components of the first color to their counterparts in the second color, and divide by two. For example, if we dithered white (RGB value 15, 15, 15) and black (RGB value 0, 0, 0), we would find that resulting dithered color's RGB value is a medium gray (RGB value 7, 7, 7).

### The Point System

Using the above rules, we'll create a point system to find a color that most closely matches the desired color. In our system, we'd go through the entire palette one color at a time to try to find the best match. A lower score indicates a better match, while higher scores reveal a poor match. These rules are not fixed; they can be fine tuned to a particular application. Here is the point system that I use:

# Modula-2

---

## Part II: Dithering in Modula-2: The Color Match Algorithm

by Michal Todorovic

---

- 1) Subtract 3 if the color is pure.
- 2) Square the differences between the RGB values. For instance, a dark red (RGB value 5, 0, 0) would add 25 to the score if it was matched to a black (RGB value 0, 0, 0).
- 3) If the differences between the RGB values are all greater than or equal to zero, or less than or equal to zero, then subtract 2 from the score.

### The Implementation of Color Match

Here's my implementation of the color match algorithm. To make the palette numbers easily accessible, we'll store the RGB values in an array of INTEGER:



```

TYPE
  PalType    = ARRAY[0..64] OF ARRAY [0..2] OF INTEGER;
  PalTypePtr = POINTER TO PalType;

```

Here's the PROCEDURE call declaration for ColorMatch:

```

PROCEDURE ColorMatch(ColorR,
                     ColorG,
                     ColorB : INTEGER;
                     Pal     : PalTypePtr;
                     Depth   : CARDINAL) :CARDINAL;

```

ColorR, ColorG, and ColorB are the RGB values of the color that is to be matched with a color from the shallow palette. Pal is a pointer to the values in our palette. Depth is the number of bitplanes in our palette.

These are some local variable definitions:

```

VAR
  Counter,
  Color0,
  Color1,
  BestColor,

```

```

(* Find the number of colors in the palette *)
NumColors := 1;
FOR Counter := 1 TO Depth DO
  NumColors := NumColors * 2
END;
DEC(NumColors);

```

The next two statements control how we go through the palette. Notice that the inner loop starts at the value from the outer loop; we do this so as not to recompute the values for similar dithered colors.

```

(* The main loop *)
FOR Color0 := 0 TO Depth DO
  FOR Color1 := Color0 TO Depth DO (*Don't recompute
                                   the same dithered colors*)

```

These statements find the RGB value of the current color. Notice that we give a bonus for the color if it is "pure."

```

NewScore := 0;
IF (Color0 = Color1) THEN (* Find the RGB values of
                           current color*)
  DEC(NewScore, 3);
  r := Pal^[Color0, 0];

```

---

## The Color Match routines presented here will take as input the RGB values for a color and match it to its closest counterpart on a supplied palette.

---

```

NumColors : CARDINAL;
r, g, b,
BestScore,
NewScore : INTEGER;

```

Color0 and Color1 are the current two components of the dithered color that the algorithm is evaluating. BestColor is the current best match that the algorithm has found. NumColors is the number of colors in the display palette. r, g, and b are the RGB values of the current dithered color. BestScore is the best score that the algorithm has found during its search. NewScore is a temporary variable to store the score that the algorithm is computing for the current color.

Here we're initializing BestColor to the background color, and BestScore to an absurdly high level. BestScore is set very high because we want the first color to replace it.

```

BEGIN
  BestColor := 0;
  BestScore := 32000;

```

The next section of the code determines the number of colors in the bitmap.

```

g := Pal^[Color0, 1];
b := Pal^[Color0, 2];
ELSE
  r := (Pal^[Color0, 0] + Pal^[Color1, 0]) DIV 2;
  g := (Pal^[Color0, 1] + Pal^[Color1, 1]) DIV 2;
  b := (Pal^[Color0, 2] + Pal^[Color1, 2]) DIV 2;
END;

```

Here we add to NewScore the square of the differences between the RGB values.

```

(* Add the square of the difference between the two colors*)
INC(NewScore, ((ColorR - r) * (ColorR - r)) +
              ((ColorG - g) * (ColorG - g)) +
              ((ColorB - b) * (ColorB - b)));

```

In this section of the code we give bonus points if the colors are shades of each other.

```

(* See if the two colors are shades of each other *)
IF (ColorR >= r) AND (ColorG >= g) AND (ColorB >= b)
THEN
  DEC(NewScore, 2)

ELSIF (ColorR <= r) AND (ColorG <= g) AND (ColorB <= b)

```



```

THEN
    DEC(NewScore, 2)
END;

```

In this last section of the algorithm, we determine if we have a new low score, and create our coded dithered color. At the end of the loop we return the best color that we've found.

```

(* Discover if we have a new best score *)
IF NewScore < BestScore THEN
    BestScore := NewScore;
    BestColor := Color0 + SHIFT(Color1, 8);
END;
END
END;
RETURN BestColor
END ColorMatch;

```

## The Summary

In these two articles on color dithering, we've discussed relatively simple techniques that will increase the number of apparent colors for all Amigas, and a method to find the best match for any color in an arbitrary palette. Although these techniques are not a replacement for Amigas with deeper palettes, they do improve the graphics capabilities of existing Amigas while requiring no additional hardware and only a little more software development effort on the part of programmers.

```

DEFINITION MODULE ColorMatch;
    FROM DitheredDrawing IMPORT PalTypePtr;

    PROCEDURE ColorMatch(ColorR,
        ColorG,
        ColorB : INTEGER;
        Pal : PalTypePtr;
        Depth : CARDINAL) : CARDINAL;

END ColorMatch.

IMPLEMENTATION MODULE ColorMatch;
    FROM DitheredDrawing IMPORT PalTypePtr;
    FROM SYSTEM IMPORT ADDRESS, ADR, SHIFT;

    (*****
    (* The color match algorithm. *)
    (*****)

    PROCEDURE ColorMatch(ColorR,
        ColorG,
        ColorB : INTEGER;
        Pal : PalTypePtr;
        Depth : CARDINAL) : CARDINAL;

    VAR
        Counter,
        Color0,
        Color1,
        BestColor,
        NumColors : CARDINAL;
        r, g, b,
        BestScore,
        NewScore : INTEGER;
    BEGIN
        BestColor := 0;
        BestScore := 32000;

```

```

    (* Find the number of colors in the palette *)
    NumColors := 1;
    FOR Counter := 1 TO Depth DO
        NumColors := NumColors * 2
    END;
    DEC(NumColors);
    (* The main loop *)
    FOR Color0 := 0 TO Depth DO
        FOR Color1 := Color0 TO Depth DO (* Don't recompute
the same dithered colors *)
            NewScore := 0;
            IF (Color0 = Color1) THEN (* Find the RGB values of
current color *)
                DEC(NewScore, 3);
                r := Pal^[Color0, 0];
                g := Pal^[Color0, 1];
                b := Pal^[Color0, 2];
            ELSE
                r := (Pal^[Color0, 0] + Pal^[Color1, 0]) DIV 2;
                g := (Pal^[Color0, 1] + Pal^[Color1, 1]) DIV 2;
                b := (Pal^[Color0, 2] + Pal^[Color1, 2]) DIV 2;
            END;
            (*Add square of the difference between the two colors*)
            INC(NewScore, ((ColorR - r) * (ColorR - r)) +
                ((ColorG - g) * (ColorG - g)) +
                ((ColorB - b) * (ColorB - b)));

            (* See if the two colors are shades of each other *)
            IF (ColorR >= r) AND (ColorG >= g) AND (ColorB >= b)
THEN
                DEC(NewScore, 2)
            ELSIF (ColorR <= r) AND (ColorG <= g) AND (ColorB <=
b) THEN
                DEC(NewScore, 2)
            END;
            (* Discover if we have a new best score *)
            IF NewScore < BestScore THEN
                BestScore := NewScore;
                BestColor := Color0 + SHIFT(Color1, 8);
            END;
        END
    END;
    RETURN BestColor
END ColorMatch;

END ColorMatch.

```

•AC•

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# 15

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# MAKING HORROR FILMS:

Five years ago, Amiga computers were just first becoming known for their flashy graphics and four-voice, stereo sound. No other computer in its price range could beat the Amiga for colorful titles, animation, and digitized audio.

It was around this time that I happened to be nearing completion on a low-budget feature film called *The Dead Next Door*, a horror movie that I wrote, produced, directed, and edited. It was my first feature after a long string of Super-8mm short films spanning a seven-year period. *Dead* was no multi-million-dollar, studio-backed extravaganza. It had a very modest budget, and after my partners and I spent all of our money shooting the film, we were faced with a dilemma as to how to get good-quality titles for cheap.

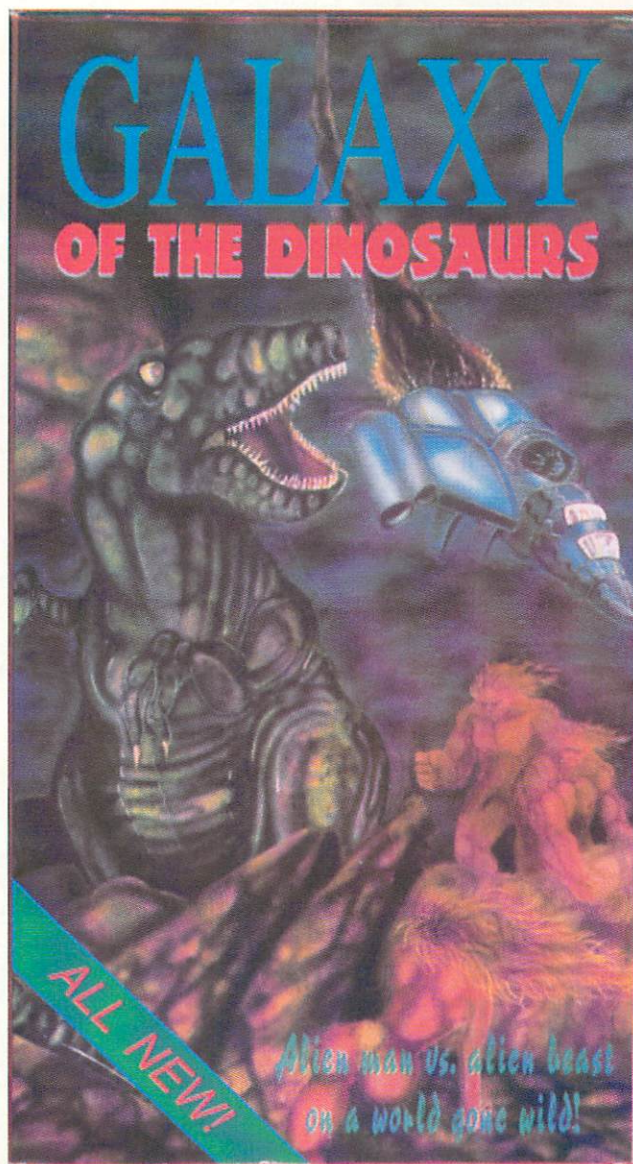
Traditionally, film companies hire optical houses to create titles on film, which are cut into the actual negative prior to the film's final printing. *The Dead Next Door*, however, was one of many films that was shot on film and finished on video, thereby saving valuable money and bypassing the world of theatrical release, which these days is ruled by the major studios anyhow.

It was in the film's final phases that I became acquainted with the Amiga. A friend of mine had bought an Amiga 1000 on a whim, and, impressed by its obvious superior graphics and easy-to-use interface, I set about solving my dilemma.

I talked the film's financier into shelling out \$1,400 under the pretense of getting nice slick titles. Not knowing anything about computers prior to this, I took the gamble and bought a stock Amiga 500 with 1MB of RAM and two disk drives, and spent several months figuring out how it ticked.

Well, the gamble paid off. The titles looked better than the traditionally bland Chyron titles used in most television productions, and added something extra to the film, helping to give it a look of its own.

By the time I landed a second feature about five months later, I had a much better understanding of the computer, and continued adding software. It turned out that the next film, *Robot Ninja*, would be even lower budget than the first. With this in mind, I made a proposal to my new investor to create the film's titles on the Amiga. He agreed under the condition that I do the titles for three of his films. Putting his money where his mouth was, he shelled out the



# AMIGA STYLE...

BY J.R. BOOKWALTER



# It's a **JUNGLE** Out There!

A man with blonde hair, wearing a green shirt and tan pants, is rappelling down a thick tree branch in a dense jungle. He is holding a rope with both hands and looking down. A red backpack is on his back, and a magazine titled "Amazing" is visible on top of it. The background is a lush, green jungle with many trees and vines.

Been through an Amiga jungle lately? Looking for a special program, application, or device? Trying to make sense out of CLI? Need the latest tricks in desktop publishing or the best programming tool for you?





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money to buy some new hardware and software, including *Broadcast Titler* (InnoVision), *DeluxePaint III* (Electronic Arts), and also a 40MB SupraDrive hard drive with 2MB of fast RAM to fully utilize this new software.

Not only did the investor like the titles, he liked the film as well, and I ended up doing two more for him: *Skinmed Alive* and *Ghoul School*. I used these films to create similar self-running titles to fulfill my prior three-picture obligation. I abandoned older slideshow software for the more powerful stuff like *DeluxeVideo III* (Electronic Arts).

Since finishing those first four feature films, I have also lent my titling to four volumes of Cinema Home Video's *Shock Cinema* series, a 60-minute collection of interviews with horror film writers, directors, and producers (including myself). I also made the plunge and traded up the old faithful A500 for a shiny new A2000!

Much has changed since the first four films. The advent of the *Video Toaster* (NewTek) and many low-priced time-base correctors has made video even more accessible to many. It was this theory that led me to an experiment. The experiment was to shoot two features, back-to-back, on S-VHS videotape, using the Amiga as an integral piece of the puzzle.

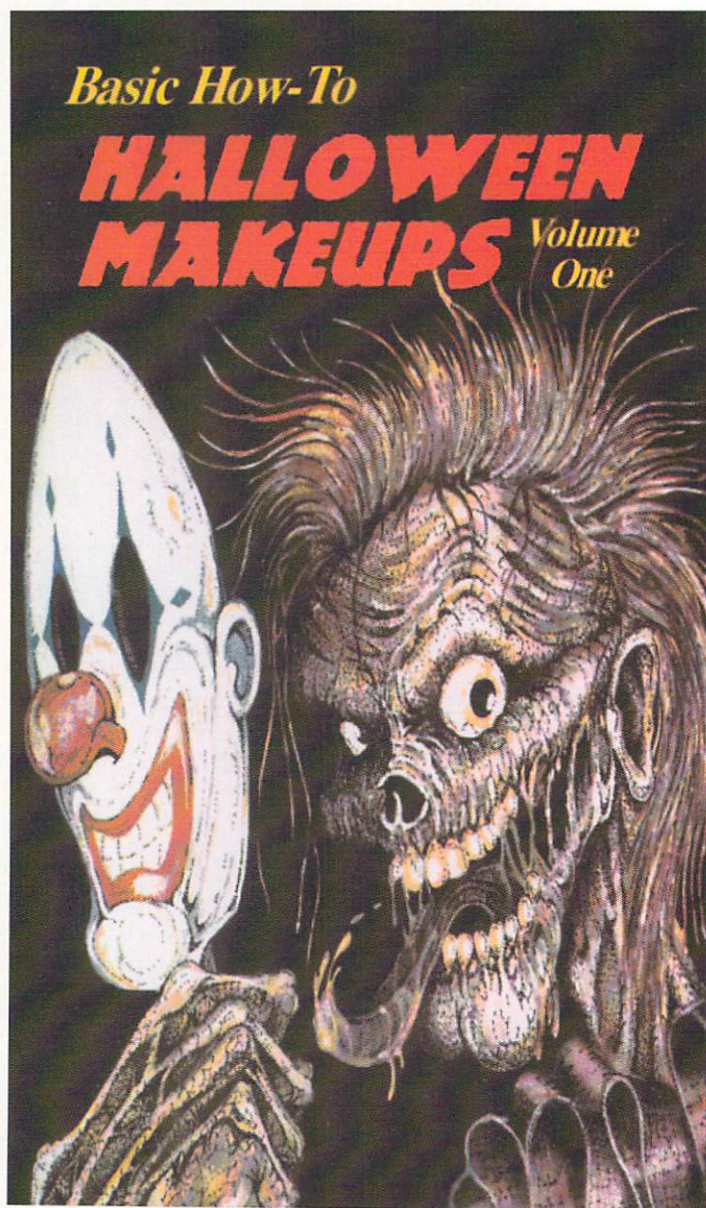
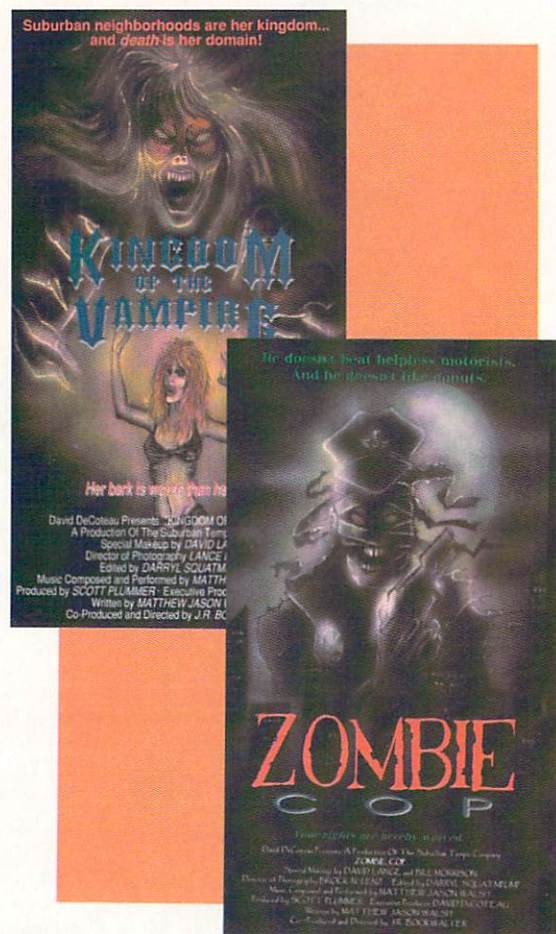
Cinema Home Video, my distributor over the last few years, came to the rescue with the money and the deal. I started in July 1991 by designing the video boxes for *Zombie Cop* and *Kingdom of the Vampire* on PageStream 2.1 (Soft-Logik Publishing). In addition, I purchased the ES-300C Scanner (Epson) and its Amiga driver software (ASDG) for the color artwork. Since we would be shooting and editing the projects on S-VHS, I

chose the Scanlock genlock (VidTech). No Toaster for us yet! The video boxes were output to negatives as color separations and were on their way to the printer.

At the same time, the production's writer was plugging away on the scripts, which were written—you guessed it—on the Amiga using *ProWrite* (New Horizons), a word processor of which I cannot speak kindly enough. Budgets were being written using PC software via the A2088 XT Bridgeboard (Commodore). Logos were being designed on *Professional Draw* (Gold Disk). Artwork was retouched and prepared in *Art Department Professional* (ASDG).

Finally, the big day arrived in late August. The shoot was exhaustive, with one week for each production. On the first day while shooting *Kingdom of the Vampire*, I broke my knee and directed the remainder of the film from a wheelchair. But by mid-September, the productions were edited. Titles were added, using the old faithfuls I have mentioned before. On October 1 the tapes were shipping to video stores across the country.

Needless to say, the "experiment" was a success. I was immediately contracted to produce two more video features,





*Chickboxer* and *Maximum Impact*, for the same company, using the same technology with some new twists. AmigaDOS 2.04 was added, and with it came ARexx capabilities, which I quickly implemented in ProWrite to facilitate screenplay formatting and computer-aided breakdown. *DeluxePaint IV* was released, and its morphing and HAM mode abilities were used to create stunning title sequences for both productions. These productions were immediately followed by two others: *Galaxy of the Dinosaurs* and *Humanoids from Atlantis*, not to mention a special interest videocassette called *Basic How-To Halloween Makeups, Volume One* (distributed by my own firm, Tempe Video).

There are other, smaller tasks that crop up which the Amiga and its cavalcade of software has easily taken on. Accounting became a concern early on. My first film involved all paper accounting, a real mess that to this day is still being waded through! On the second film, the money for *PHASAR* (Psygnosis) was worked in, and easily paid for itself very quickly.

Doing so many productions back-to-back in this fashion also necessitated some quick sound mixes. Being based in Ohio created another problem, lack of Hollywood-style recording studios, which we initially solved by setting up a 16-track studio. But the Amiga saved the day again. I bought Perfect Sound (SunRize) and created samples of various sound effects, including punches, body falls, and the meatier sounds needed for the films' more violent moments. Now SunRize has come up with AD1012, a digital sampling board

With this in mind, I eliminated the task of writing out all of the shots by hand by purchasing EDLP: *Edit Decision List Processor* from MicroIllusions—again thanks to our faithful and financially capable investor! This software allows you to input your data, then create a list of reel numbers, in and out points, and transitions (fades, dissolves, etc.), and transfer this list to a disk that can be read by the editing equipment of most facilities. Working in this manner, we simply fed the disk into their machine and watched as the machine started on reel one, dropping in all of the shots in their proper place, then doing the same for reel two, and so on. The studio where we did our cutting had an older CMX editing setup that needed an 8-inch floppy disk, but after \$50 and a trip to a larger house we walked away with a properly formatted disk with our EDL on it.

Besides this long list of uses, the Amiga really comes in handy now, when I am in the process of getting together new projects. Using PageStream, Professional Draw, and the Epson ES-300C hardware, I have saved time and money by laying out mock-up versions of possible poster designs, not to mention business cards, letterheads, and envelopes. Great output for little money can be had by using an HP LaserJet IIP (Hewlett-Packard), which can easily be converted to output PostScript with the low-cost Pacific Page cartridge from Pacific Data. It's also a great setup to have between projects when money is tight. You can create flyers and the like for anyone who will have them!

---

## TRADITIONALLY, FILM COMPANIES HIRE OPTICAL HOUSES TO CREATE TITLES ON FILM, WHICH ARE CUT INTO THE ACTUAL NEGATIVE PRIOR TO THE FILM'S FINAL PRINTING.

---

which plays and records straight to your hard drive, and whose samples can be triggered directly to SMPTE time code from a videotape source. We first used this new technology on *Chickboxer* and *Maximum Impact*, and the results are truly astounding.

Being a semi-advanced musician, I decided to link my mass of MIDI gear into the Amiga to create the music score for my first four features as well. I added a software sequencer to the setup, initially *SoundScape* (Mimetics) and later *Music-X* (MicroIllusions), along with a MIDI interface and began churning out both the actual movie score as well as several accompanying songs by myself and others.

For *Ghoul School*, the investor decided to attempt some cost-saving measures. Instead of editing the 16mm film itself, we transferred it all to video. We stripped the videotape with SMPTE time code with the intention of creating a one-inch video master of the film, bypassing almost altogether a lot of expensive film processing and printing. This technique was very familiar to me, having been used on *Dead Next Door*. However, the biggest bug in this system was creating the final edit decision list.

The edit decision list is basically a list of each shot in the film. Because all of the original uncut film is stripped with time code when it is transferred, you have anywhere from 500 to 1500 cuts that all have separate beginning and end time code numbers, not to mention the fact that they are on individual reels of tape.

When the one-inch video master is cut, you are spending upwards of \$200 or more an hour to do so. Obviously, taking the time to read numbers from each shot at this stage is very expensive.

Although you may never decide to use your Amiga for such "horrific" uses, it is nice to know that this technology exists. In fact, many exciting developments have occurred since I first bought my Amiga 500 in early 1988, including such devices as NewTek's Video Toaster. With only a small cash outlay and your computer, you can get the same results you see here, learning as you go.

Keep on the lookout for low-budget features or other productions being done in your area. Producers are always looking to get a quality product inexpensively. With a low price quote, some talent, and a copy of this article, you can probably sway their decision and get the job of creating their titles! Good luck!

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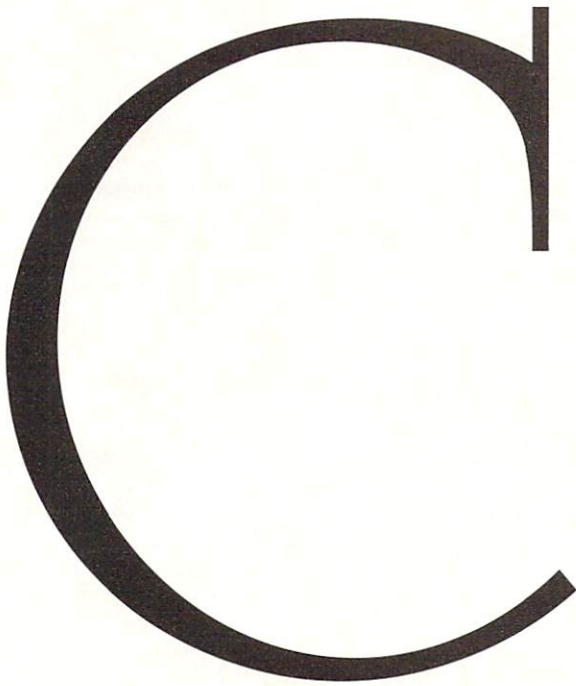
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# Using the C Preprocessor to Simplify Amiga Structure Definitions

by Kevin Musick

MANY PEOPLE ARE INTIMIDATED by the number of Intuition structures which must be initialized in order to add a graphical interface to their applications. It is not unusual to find C header files with several pages of structure definitions. Thankfully, the mighty C preprocessor offers an elegant solution, one that is sometimes overlooked. The purpose of this article is to demonstrate how to reduce the size and thus increase the manageability of Intuition header files using the C preprocessor.

## The C Preprocessor

The C language allows programmers to specify instructions to the preprocessor via commands that begin with the pound sign (#). For example, we can define a constant with the instruction

```
#define PI 3.14159
```

During the initial stage of compilation, the source code is passed through a module called the "preprocessor." All references of the constant PI as defined above are replaced by the numerical equivalent given. Thus, a line of code written as

```
area_of_circle = PI * radius * radius;
```

is translated into the line

```
area_of_circle = 3.14159 * radius * radius;
```

Similarly, we can define more complex definitions, such as the following to compute the absolute value of an argument:

```
#define ABS(n) ((n < 0) ? -n : n)
```

## Enter Intuition

The same concept can be applied to creating Intuition structures. For example, consider the IntuiText structure.

```
struct IntuiText
{
    UBYTE FrontPen, BackPen, DrawMode;
    SHORT LeftEdge, TopEdge;
    struct TextAttr *ITextFont;
    UBYTE *IText;
    struct IntuiText *NextText;
};
```

Most of the time the text we define will have the same pen settings, the same drawing mode, and the same font information. The #define directive can be used to create macroinstructions that make structure initialization much simpler. As an example, when creating several IntuiText structures in which only the LeftEdge and TopEdge coordinates and the text itself vary, a definition requiring these three arguments can be written as:

```
#define ITEXT(x,y,t) {1,0,JAM1,x,y,(UBYTE*)t,0 }
```

This definition assumes that pen one is used for the foreground pen, pen zero for the background pen, that the drawing mode is JAM2, and that there are no other IntuiText structures to be linked with each one we define. These values can of course be changed to meet specific needs. The idea is that since they will be constant, they can be defined in a macro as illustrated.

It is then possible to define an IntuiText structure by writing the following code, which will use the sample values of 10 for the LeftEdge field, 20 for the TopEdge field, and "Sample Text" for the textual field:

```
struct IntuiText ITextDef = ITEXT(10,20,"Sample Text");
```

Notice that there is no need to typecast the string "Sample Text" to UBYTE \*, since this is taken care of in the macro.

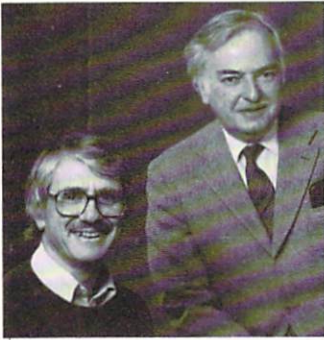
These shortcuts are even more helpful when using larger structures, such as those for defining gadgets and menus. The approach is the same: initialize all fields that remain constant for all your definitions, and have a macro parameter for each field whose value is dependent on the declaration. To illustrate this, sample definitions are given for a small requester that has two Boolean gadgets (i.e., a "continue" button and a "cancel" button). This will require a new macroinstruction specifically for gadgets.

```
#define BOOLGAD(x,y,b,t,p) {p,x,y,80,15,GADGHCOMP,RELVERIFY,\
(APTR)&b,0,&t,0,0,0,0 }
```

A couple of generic definitions are also required for this example:

```
SHORT ButtonPts[] = { 0,0,80,0,80,15,0,15,0,0 };
```





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```
struct Border ButtonBorder = { -2,-1,1,0,JAM1,5,ButtonPts,0
```

The declarations for the dialog using our new macroinstructions are straightforward.

```
struct IntuiText Button1Text = ITEXT(10,50,"Continue");
struct IntuiText Button2Text = ITEXT(100,50,"Cancel");
struct Gadget Button1Gad =
BOOLGAD(0,5,48,ButtonBorder,Button1Text);
struct Gadget Button2Gad =
BOOLGAD(&Button1Gad,95,48,\ButtonBorder,
Button2Text);
```

When dealing with the multitude of Amiga structures, especially those used by Intuition which are used repeatedly in program definitions, using the C preprocessor can save time and space, and make source files easier to handle. It is also easier to make changes which affect every structure, since only the macro needs to be altered.

•AC•

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c/o Amazing Computing

P.O. Box 2140

Fall River, MA 02722-2140

## WINDOW SIZE

## A utility in C

by Anthony J. Willard

The following is a simple C utility that allows you to resize windows without the mouse.

The program itself is very straightforward and streamlined. Begin with the only #include, intuitionbase.h, which has the definitions necessary to perform the task. The #pragma statements allow the program to be made resident. The \_main prevents any information being passed to or from the standard input/output (usually the CLI/SHELL) and decreases the size of the final executable. We open the intuition.library without any error checking—we don't have much of an Amiga without it! We lock IntuitionBase to prevent any other task from modifying the data while we are working on it. Now the work starts. The first check is to see if the window is located in the upper left of the screen—if it is not, put it there. Next, we check the size of the window to see if it is as large as the screen. If so, we make it as small as the minimum values of the window and move it behind any other windows that may be open. If the window is not full size, we make it full size and bring it to the front. Now we need to give IntuitionBase back to the system, and close intuition.library. That's it!

I used SAS/C compiler v5.1. I have included the make file. With those options, the final size is *very small* and can be made resident, resulting in rapid response.

### Listing ws.c

```
/* ws.c - a program to adjust the SHELL/CLI window *
 * from the command line without the mouse. *
 * if small -> large, large -> small. *
 * Anthony J Willard *
 * lc -b -tr -Lend */

#include <intuition/intuitionbase.h>

/* these are so it can be made resident */
#pragma syscall CloseLibrary 19e 901
#pragma syscall OpenLibrary 228 902
#pragma libcall IntuitionBase LockIBase 19e 1
#pragma libcall IntuitionBase UnlockIBase 1a4 801
#pragma libcall IntuitionBase SizeWindow 120 10803
#pragma libcall IntuitionBase MoveWindow a8 10803
#pragma libcall IntuitionBase WindowToFront 132 801
#pragma libcall IntuitionBase WindowToBack 138 801

struct IntuitionBase *IntuitionBase = NULL;

void _main(void) /* _main as not to pass info to/from stdio */
{
    ULONG lock;
    /* if we don't have this, we have problems */
    IntuitionBase=(struct IntuitionBase
*)OpenLibrary("intuition.library",33);
```

(continued on page 68)





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# ALADDIN 4D

## An exclusive look at ALADDIN 4D (Draw-4D Pro 2.0)

by R. Shamms Mortier

Originally, Adspec called its software *Draw-4D*. Unlike *Draw-4D Pro's* attention to video, *Draw-4D's* focus was desktop publishing. Instead of being an animation program, it focused upon porting 3-D grayscale artwork (3-D lettering for titles and manipulated clip art) to *PageStream* and *Professional Page* as PDraw "clips" or as straight IFFs. It did this well, but received little attention from the press. It seems that video applications far outweigh DTP on the Amiga, so Adspec redesigned and enhanced *Draw-4D* to handle 3-D sculpting and animation, and added the word "Professional" in the process. The latest *Draw-4D Pro* release was 1.2. It included a Workbench 2.0 interface design, the ability to read and write Videoscape object file formats, and a box full of tools that help the Amiga artist to design 3-D objects that can be colorized, wrapped with textures, manipulated in dozens of ways, and animated. As a reward for this new direction, *Draw-4D Pro* quickly enlarged its marketshare, and the list of its dedicated and supportive users grew by a thousand percent. Taking an obvious hint that the video direction was the way to move, Adspec then launched a year-long enhancement and upgrade effort in order to challenge any and all comers. *ALADDIN 4D* is the result of that research and development, and there will be many future upgrades to follow.

The *ALADDIN 4D* Edit screen contains all of the same tool icons that experienced *Draw-4D Pro* users are familiar with, so for them the transition to *ALADDIN 4D's* Edit screen should prove easy. For those readers not familiar with *Draw-4D Pro*, however, it might be useful to take a brief journey through the Edit Screen toolbox and its uses, especially because the design of many of the tools and especially their associated icons is unique to this software and different from that of other Amiga 3-D/4-D packages. The Edit screen is the place where objects are designed and assigned various attributes or lists of attributes, where the screen resolution and rendering engine (IFF, FireCracker, Resolver Board, DCTV) are set, and where fonts are imported and manipulated. The Edit screen is counterbalanced by the Render screen, where objects are rendered either as a picture or as an animation frame.

*ALADDIN 4D's* tool icons are not similar in design to those used for the same purposes in other Amiga 3-D programs, but then again, most Amiga software of this kind has unique-looking icons designed for the tools. *ALADDIN 4D's* icons are, however, designed so that they visually represent, as closely as possible, the actions that they initiate, thus aiding in the learning process.

Though the top menu bar offers dozens of other necessary design alternatives and procedures, and we don't have the space to cover all of them here, I consider four additional operations to be of prime importance:

**1. Make an Arc:** This allows you to create an arc of any degree (360 degrees = a circle) and any number of points around the origin (XYZ=0,0,0) for planar, extruded, or lathed 3-D objects.

**2. Make a Rectangle:** This is *ALADDIN's* alternate "primitive" operation. You can create either rectangles of any orientation or full 3-D cubic shapes.

**3. Deform:** This operation is necessary to master for animating. Deforming a selected object allows it to change over time and a number of frames. The object can rotate, move, and exhibit strange stretching and pulling attributes in a believable manner when this technique is mastered.

**4. Path design and operation:** A *path* in *ALADDIN 4D* is a track upon which assigned objects move. Paths have global parameters (rotations and other attributes) so that objects

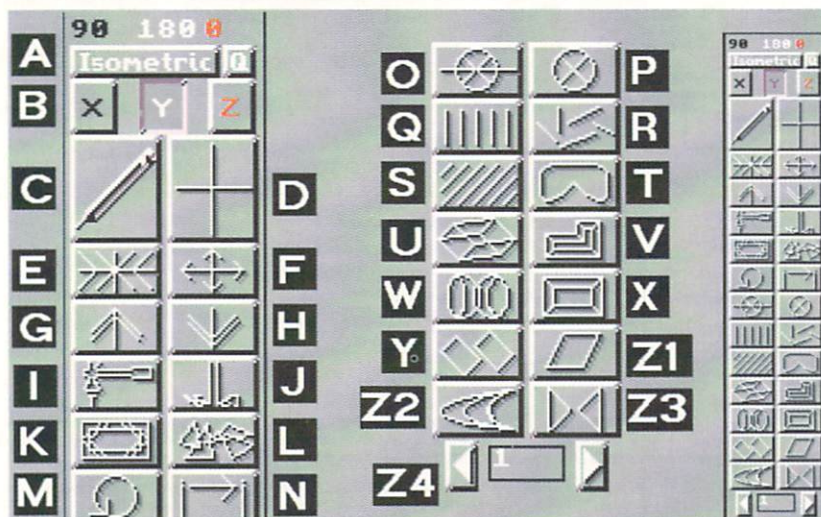
assigned to them take on the path's personality.

### PostScript Compatibility

You don't want to sculpt images on *ALADDIN 4D's* Edit screen, but would prefer to compose them with bezier curves in a vector drawing program like Gold Disk's *ProDraw 3.0*? No problem. *ALADDIN 4D* can import any PostScript file, including any PostScript clip art or fonts available, and then allow you to add 3-D depth by extruding it. Can you imagine how many class A PostScript quality fonts are out there for the taking? The imported material can be customized and tailored to your liking, even to the point of minimizing the necessary points of the object so that the resulting 3-D figure won't have too many polys to deal with. PostScript art is much smoother than the curves drawn in a 3-D sculpting program. This attribute alone is worth hundreds of dollars and gives *ALADDIN 4D* a tremendous jump on the competition.

### The Additive Soul of the ALADDIN Requesters

The *Draw-4D 1.2* Deforms requester had an attribute that is now shared by all of the *ALADDIN* requesters—a slider that allows the animator to add another "level" of operation; that is, a segment that ties itself to the first animation. You can, in fact, tie as many segments together as you need, and you can vary each segment, by length of time or frame, as needed. You can also tell *ALADDIN* when specific actions or textures are to come into view in each segment, and when they should end. Let me give you an example of what I mean. Let's say you have an animation that lasts 120 frames. In it, you have a small sphere orbiting another sphere. Well, from frame 1 to 60 the small sphere could be texture mapped as if it were made of wood, then slowly change to a chromed surface for frames 61 to 90. At frame 91, it could take on a procedural texture, maybe one that is transparent enough to allow the chrome to show through. From frames 110 to 120, it could suddenly become a bump map. All of the while, it could be deforming, changing its characteristic shape in space, and rotating on any axis at the same time, while mapped





with animated waves. Perhaps the central sphere could be targeted as one of ALADDIN's special "gases"—actually a cubic surface made to represent a spherical mass. This gas could be spinning on its axis, and midway in the animation, ghostly gas-like letters could be seen wavering at its core, mapped by a multi-colored IFF texture.

The requesters connected with ALADDIN's features now allow you to build animations that have an infinite variety of internal elements that change their personalities over time. All of these attributes and textures can now be *stacked*, set to fade and morph from one to the next. This is the dream of the alchemists made visible, changing any substance into another before your eyes—wood to chrome, plastic to gold, bitmapped to transparent soap bubble.

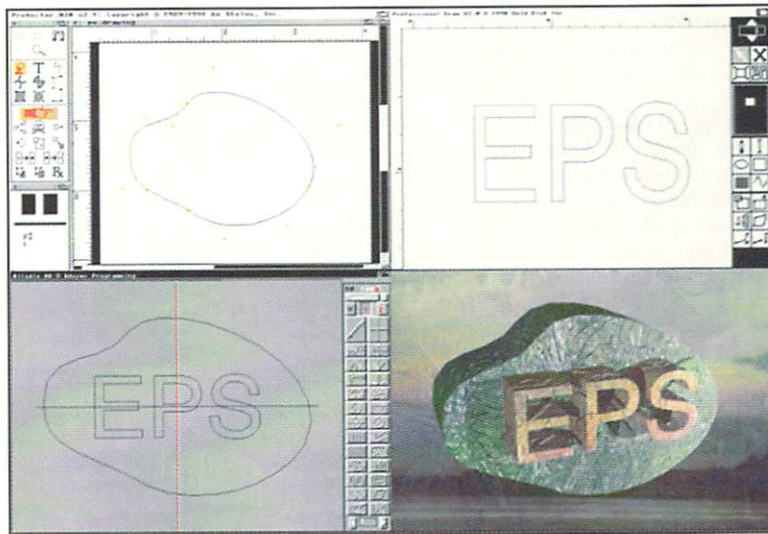
## Backgrounds, Etc.

Compositing backgrounds, foregrounds, and *overlays* is new to ALADDIN 4D. It is so intuitive that many Amiga animators will use it as a stand-alone animation device. Like the compositing done with ASDG's *Art Department Pro*, background pictures can be combined in an almost infinite variety of ways. The difference with ALADDIN is that this whole process can be animated, giving you complete control over your background data. Multiple fades and other neat effects can be part of the process, all targeted to a variable animation timeline. A foreground image might be set against a background, with its color0 set for transparency, allowing the background image to show through. A separate overlay may also be set to change over time. Overlays can write textures to an entire animated sequence. Any of these can also be single frame animations, so that with ALADDIN, animation compositing—with 24-bit, DCTV, and standard IFF animation frames—is now a reality!

## The Texture List

Textures are first loaded into a *list*, so that any member can be chosen and time or frame mapped onto a selected object. This list appears when you ask ALADDIN 4D to set a texture for a selected object. Alternate lists may also be mapped to a single surface. For instance, an object might have one bump map of a face set to its surface, but alternate IFF textures (wood, marble, metal) might play across the same bump map over time.

Procedural textures are composed of geometric configurations that can be painted and animated on your 3-D objects. Although they render as quickly as bitmaps, unlike bitmapped textures, they take virtually no space. ALADDIN 4D comes with 36 procedural textures in place as "primitives," each of which can be edited in hundreds of ways. These are up to eight color textures whose dimensions can vary over time, whose colors can be changed, and whose edges can be set to a very fine "blend." A procedural texture set to animate across a chromed object can make it look as if the object has another object reflected in its surface, or any one of hundreds of other effects. All of these effects are generated with the Attach Point (ATP) as their origin of effect.



Since ATPs are repositionable, and since you can combine as many procedural textures on any object as you would like, the creative options are limitless. The amount of *turbulence* (random change) can also be set in a procedural application.

Of course, ALADDIN also handles mapping any normal Amiga image (IFF, 24-bit, and DCTV) to any object. If you save these images as single frames numbered in consecutive order, you can also animate full animations on an object. These animations, of any Amiga flavor, may be of any size—another ALADDIN first! The images may be Projected from any view (including a Free Angle projection), Cylinder Wrapped (for cans, etc.), Spherical Wrapped (for mapping textures to your revolving "planets"), and/or shingled. You can even stack different methods one on another, using the same image or animated frames. The images can be X or Y flipped, and can exhibit color and strength changes over time.

One of the settings here is marked 2DENV, meaning *two dimensional environment*. This is a completely editable setting that allows you to set the "sky" and "ground" colors, including the degree of blend involved. Obviously, a 24-bit or DCTV output would give you smoother results than a standard IFF image.

Reflection Mapping targeted at an ALADDIN 4D, 3D object is geared towards surfaces that are chromed, meaning that they reflect all light and are usually painted pure black; other colors will look like shiny plastic or other metals. A Reflection map is projected from behind the viewer's head. Unlike bitmapping a texture, it remains steady in space as the object moves. For instance, I took a cloud picture from my Xapshot camera, digitized it, saved it as a 24-bit image, and Reflection Mapped it on a chrome doughnut shape that was spinning in space. As the image turned, the cloudy sky was reflected on its shape perfectly.

GENL normally means GenLocking, which allows a video signal to show through an animation. In ALADDIN 4D, this genlock setting allows the bitmap textured poly to be invisible where it is touched by color0. Another

way that ALADDIN utilizes color 0 is in its DECAL routine. Here too, the color 0 of a bitmapped IFF disappears, allowing the image and/or color of the object to show through.

There is also an Opacity setting included that allows the user to simulate laced effects like those found in lacy curtains. As if that weren't enough, there is also an anti-aliasing mode that truly has to be seen to be believed. With this mode, you can zoom in to your heart's content on a BitMap, even down to a couple of pixels that fill the screen, and—hold on!—the jaggies will all be smoothed!

## The Attributes List

Eventually, everything in ALADDIN will work with lists, as most of the options already do. This is great because it cuts down tremendously on the necessary learning curve connected with the software, and it adds multiple timing levels to every facet of the program. Lists can also be saved and recalled to be applied to other animations. ALADDIN 4D comes with several default lists as examples and experimental environments.

One of the newest and most magical features of the Attributes List is the ability to create Background Polys. I'm sure many Amiga animators have at one time wanted a 3-D object to interact with a background in their animation, e.g., perhaps having a 3-D object passing through the background or appearing from it. Up to now, there was no way to do this, except to have the background painted to an intervening plane. But a true background takes its size from the screen size, not from the size of a plane, so it remains the same size no matter how "far" you get from it. ALADDIN 4D actually allows you to interact with a background picture. Intervening planes take on the image of the background, and can be used as opaque walls in your animation. A 2-D wireframe drawing lying on a desk can suddenly come to life as a 3-D animated object.

ALADDIN 4D can create ray-traced shadows, but ray tracing of any sort adds time to rendering. A future upgrade will alter the way shadows are produced to get away from ray tracing. But now, shadows can respond to any light source, and can be "received" by any



selected object. Multicolored and animated shadows can move across any surface as the lights themselves are set upon an animation path.

What is a *gas* in ALADDIN 4D? A gas can be air, flame, stars, fog, clouds, or even a vaporous neo-solid that exists somewhere out in the cosmos. No other computer graphics package creates gases, although when other vendors see those created in ALADDIN 4D, it won't take too long for them to emulate the process. When you see these gases in 24-bit (like on a FireCracker), you will agree that they are good enough for science fiction movie effects! These gaseous objects are created in a cubic space, a space that can be morphed over time. You haven't seen anything on your Amiga until you watch as a multicolored sun spins in deep space, its corona shifting in response to invisible forces. The density and color of the space can be modified over time, and the gas can take on the personalities of bitmaps projected on the sides of the cube, including animations! In fact, each face of the cube can have a separate Attribute List. Have you ever seen a logo made of shifting flame or of fog? The anti-aliasing component of a gas, which affects observed screen resolution, can be so fine as to obliterate the jaggies in a 80 x 50 pixel bitmap!

### Animations in Virtual Space

ALADDIN 4D 2.0 now includes Camera/Target operations, and the target may be written "targets," meaning multiple "look points." What does this mean to the Amiga animator? Well, picture a 3-D scenario on your screen. There is a table next to a window on the left side of a room, and a clock on the right side whose moving hands are keeping track of time. Farther to the back is a TV screen playing a loop of one of your favorite animated sequences. The room is fairly large, so that taking all of this in at one glance on one screen is impossible. So, in your animation design, you prioritize three targets for a camera which moves on a path: the table, the clock, and the TV screen. After setting all of the needed op-

tions (and checking to see that you have a nice chunk of room on your hard drive), you render the animation. When it plays back, you (the camera) float into the room and look down at the table. Then your eyes pan right to take notice of the clock, after which you are brought close to the TV screen and witness the animation playing on it. There are an infinite number of altered scenarios and dreamscapes that could utilize this ALADDIN 4D 2.0 feature well. I'm sure your mind is ablaze with a special one at this moment.

### Rendering

D4DP 1.0 was the first Amiga rendering package to write directly to DCTV, and ALADDIN 4D remains the package that does it best. It writes both 3 and 4 bitplane images in either laced or non-laced formats. I always use an 8 color (3 bitplane) laced option when rendering an animation. This is so because a 4 bitplane animation (16 colors) will not run smoothly in a playback; I usually use Electronic Art's *DPaintIV* as the playback testing software. I do use the 4 bitplane option, however, when rendering a background picture. ALADDIN 4D 2.0 now also can wrap a DCTV image on a surface, as it will read it as well as write it. This is great news for DCTV owners.

Like its parent D4D-Pro, ALADDIN 4D also imports DEM (Digital Elevation Map) files from Natural Graphics' *Scenery Animator*. The fourth issue of their newsletter, *4D Pro Master*, has a nice tutorial on how to "grow" mountains from a DEM structure. Since these scenery maps are just seen as another normal 3-D object, they can also be targeted with all of the other fancy attributes and options the program offers.

ALADDIN 4D 2.0 also writes and saves in 24-bit. Of important note here is that it addresses the Impulse FireCracker board directly, allowing complete interactive operation with the FireCracker 24-bit paint program as well. It renders very fast to the FireCracker, and the display is absolutely astounding. This software should boost the sales of the

FireCracker once the message gets out. ALADDIN 4D also addresses the Resolver Board directly.

### Conclusions

Although this software can create any "hard-edged" object you can sculpt, its use was never meant to be specifically for "engineering types." This is software that will introduce the Amiga to the fine artist and animator. Its watchword is *creativity*. Everyone that uses it can impress one's own creative style, one's own unique signature, on the results of his or her efforts. This is the visual software that the Amiga has been waiting for. Where it goes from here is anyone's guess.

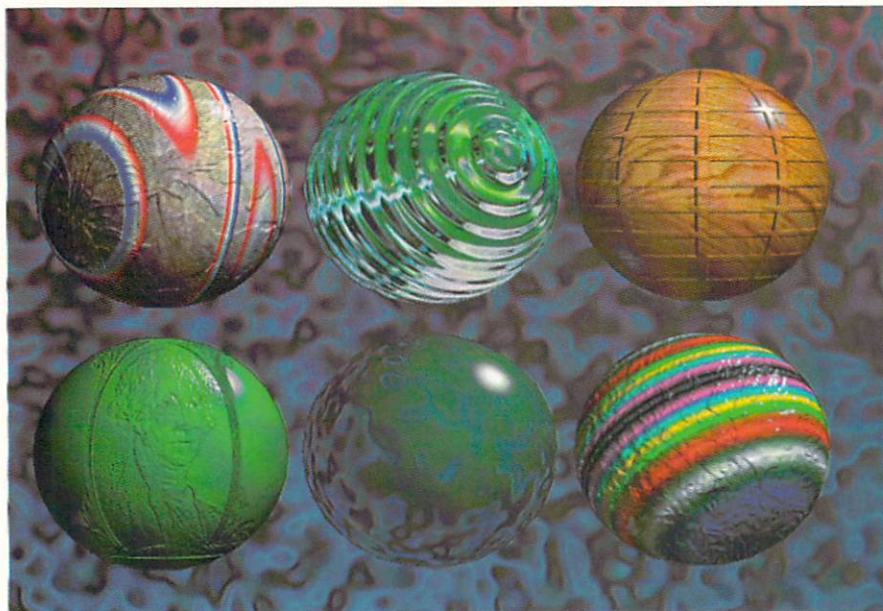
ALADDIN 4D is not a ray tracer (except for the present "shadow routines" that will be altered in the next release). That was a conscious decision by Adspec because ray tracers are *slow*. ALADDIN 4D is anything but slow, rendering animation frames, which you can observe being written in real time, in anything from 5 percent to 50 percent of the time of any other Amiga package. However, with a little study, you can make ALADDIN 4D do everything that a ray tracer does, and save lots of time in the process. ALADDIN 4D is "second order intuitive," meaning you need to do a little work before it becomes second nature. I would estimate that new users will need about two weeks of study to master the processes in ALADDIN 4D. Experienced (Draw-4D Pro) users will need about four days to feel at home.

When the word really gets out about this software's capabilities, I say that it will have the same relationship to Amiga animationware that DPaint has to 2-D Amiga paint programs. It will be the one piece of Amiga animation software that everyone owns. It has a nearly infinite array of options: all of the necessary sculpting tools, animated gases, multi-mapping features—procedural, texture, bump, environment, and more—single frame IFF animation mapping, camera/target capability, PostScript transport—fonts, structured drawings, and clip art—full object morphing, path-to-path animating, background-foreground-overlay animation features, multi-timeline controls, eases, total DCTV and FireCracker support, "tiny" preview screen available in any mode (including DCTV), lightning-fast rendering, a quarterly newsletter that is bulging with tutorials and a disk full of objects and other neat stuff, a staff that is dedicated to service for its Amiga customers, and a reasonable price! Master its processes, and create new and amazing Amiga worlds by being the first ALADDIN 4D in your neighborhood to rub the magic lamp.

•AC•

ALADDIN 4D (Draw-4D Pro 2.0)  
Adspec Programming  
467 Arch Street  
Salem, OH 44460  
(216) 337-3325  
Inquiry #247

Please Write to:  
R. Shamms Mortier  
c/o Amazing Computing  
P.O. Box 2140  
Fall River, MA 02722-2140





# bug bytes

by John Steiner

The latest in tips,  
workarounds and upgrades

## This month:

- SCSI Device problems
- PostScript for ProWrite
- Updates to AmiGantt and STU

In the July issue, I reported on a problem regarding the *Teachers Toolkit* program from TTR Development. I received a fax from TTR and a letter from Dr. Soper, the person who had the problem. Both noted that the problem had been corrected prior to my comments in the August Bug Bytes. In fact, Dr. Soper noted that Ms. Barbara Butson of TTR took care of the problem personally. Evidently she had been on extended leave, and was upset to learn the problem had not been solved upon her return. She sent the repaired program by Federal Express, and it was received on schedule. The new disks fixed both the class size problem and a problem with graphic printing. Dr. Soper noted that there was no documentation of a new revision number on his update.

**company:** Zardoz Software  
**re:** Customer Support  
**source:** mail

Ken Boi writes with a complaint that he has contacted Zardoz Software on several occasions regarding a bug he reported to me in a previous issue. He was motivated to write by our mention of another user's problem in contacting Zardoz in the July 1992 Bug Bytes. Ken's problem would be fixed by a promised future upgrade, they told me at the time, and Ken wrote on several occasions asking them about a release date. He finally gave up, and let it go at that. In his letter, he wondered why Zardoz would answer my calls and questions, when it appears they don't regularly do that for end users. I called Zardoz and talked with Dorothy, the individual who answered the phone. I won't editorialize about Zardoz with regard to their technical support, but I'll print her response and let you come to your own conclusions. I read Ken's letter to her and asked her to comment. She told me that because of their move, they had mail problems and that she had just received Ken's last letter. She also commented that the update Ken asked for is done, and they are sending them out at no charge to those who call and report problems with their current version. She made no excuses about Ken's comment that he had sent several letters and had received no reply, and only commented that the new version 1.1A is now being shipped. She noted that it fixed all known bugs in the earlier version. The program now supports GIF, HAM-E, and PCX format files as well as IFF images. It is faster, and supports a 68040 based system. I am also a registered user of *Image*

*Finder*, and it'll be interesting to note if I get an update from Dorothy by the time this issue goes to press. I'll keep you posted.

Zardoz Software  
12036 Nevada City Highway, Suite 192  
Grass Valley, CA 95945

**product:** PostScript interpreter/  
PixelScript  
**re:** support  
**source:** mail

Robert-CCN (only name given), Amiga editor for the California Computer News, sent along a comment by E-Mail regarding my mention in the August issue of a PostScript interpreter for the Amiga. He writes, "...A much much better choice would be the PD program POST, its latest version 1.7B. This lets you view PS files on the screen, save them as IFF, and print them to your Preferences printer. It is very nice, and though I use *ProPage* mostly with Compugraphics fonts and my Deskjet, this utility works great if I get a PS file elsewhere."

Dennis Bieber of Sunnyvale, CA, noted that the program I suggested, *PixelScript*, is no longer supported. He inquired into updating his version and was told by Pixelations that they no longer support the Amiga. He purchased *SaxonScript Professional*, a PostScript interpreter that installs as a new Amiga device. He doesn't have a recommendation at this time as the package was missing the main program disk, and he is currently waiting for a replacement disk.

**product:** SCSI mount  
**re:** slow-starting drives  
**source:** E-Mail

Since the publication of my comments regarding the SCSI mount problems with slow-starting hard drives, I received a plethora of responses, many of which identified the same or similar solutions. Rinaldo Petherino provided the most comprehensive description of possible solutions, so I include his comments along with thanks to those many readers who also provided similar information.

He writes, "There are two PD programs that will easily solve your problems. They are *SCSI Prefs* and *LateSCSIMount*." He provided excerpts from the documentation files.....

SCSI Preferences for the Amiga 3000

by Martin A. Blatter  
(blatter@ifi.unizh.ch)

This small program allows you to change the bits in the Amiga 3000's battery backed up memory that control some parameters of the embedded SCSI host adapter. It requires AmigaDOS 2.0 or higher and an A3000. It won't run on an A2000.

SCSI Prefs is Freely Distributable Software. Put SCSI Prefs in your prefs directory. It offers the same look and feel as the standard 2.0 Preferences editors, so you'll immediately find yourself familiar with its user interface.

LateSCSIMount - Copyright 1991, Sean Riddle, Riddle's Solutions  
AmySource BBS - (405) 793-1097

LateSCSIMount was written to mount my SyQuest drive if no cartridge was in the drive when I rebooted, or if the system booted up before the SyQuest cartridge spun up. It works by scanning the SCSI units and mounting any partitions found that aren't already mounted. It mounts them using the partition information stored in the RigidDiskBlock area of the hard drive, so your controller must support Direct SCSI commands as well as the RDB standard. GVP, MicroBotics, and Commodore all support these, so it should work with these. You will have to check your hard drive's manual or technical assistance to see if these are supported. You will also have to know the name of your SCSI device (if it is not "scsi.device").

Or you might try *SCSIMounter* which is also great for Removable Media.

SCSIMounter 2.0: Removable media partition mounter for Kickstart 2.0 or higher. Most owners of removable media SCSI drives are stuck with the problem that their software doesn't handle disk changes correctly. For example, the current Commodore implementation doesn't mount the partitions on a removable media SCSI drive (e.g., SyQuest or Ricoh) when there is no cartridge in the drive at boot time.

Rinaldo also runs an 800-member BBS in Chicago called OMEGA, (312) 335-8714 on a USR Dual Standard. He also noted that the files listed above are all available on his BBS, but Portal should have them also.



I got several letters from people who mentioned that they were using Sean Riddle's LateSCSIMount, so I gave him a call. He noted that his program is freely distributable, and he offered to send me a copy. I have received that copy, and it's been installed on my A3000 and executes almost immediately in my A3000 startup-sequence. It works just like advertised, and I haven't had to reboot my system to have it recognize my Seagate drive since I installed it. If you cannot find it on one of the BBS systems or commercial services, you can send Sean \$2.00 to cover the cost of the disk and postage. Sean's phone number is (405) 631-BYTE.

Frank Papaeliou of Pocatelto, ID, noted that he was able to solve his problem by simply mounting the second drive before accessing it. This solution worked for him on his A3000T. He placed the mount instruction after the binddrivers and before the loadwb commands. I tried Frank's solution on my system, but could not make it work right. You might try it though, as it might work in your situation.

---

**product:** low-level MFM formatter  
**re:** acquiring program  
**source:** E-Mail

E-Mail received from Gary Ludwick on CompuServe noted a request by Mr. Pete Guerin for a low-level MFM formatter. He writes, "[I] can't speak to its usability with the 2090 controller, but I do have a low-level format program that works on such drives as Seagate 251, which I believe is MFM. The program name is "W4021" which leads me to believe it might be for a Western Digital controller and 40MB drives...but not sure about that. If Mr. Guerin wants to try it out, I'll either upload here or send him a disk." It is my policy not to publish addresses of readers in the column, so if you want his E-Mail address, Mr. Guerin, drop me a note and I'll pass it along to you.

---

**product:** ATonce  
**re:** revision 4.1 motherboards  
**source:** reader

I received a fax from Jerry Moore of South Carolina. He commented on Robert Galka's problem with the ATonce. He noted that there is a problem with some, but not all, revision 4.1

motherboards and ATonce. He recommends upgrading it to revision 4.5 and further commented that he does not need to have his Commodore service agency replace the motherboard to do that. He said Commodore had a Tech Topics publication that described the process for updating that board in the field.

---

**product:** ProWrite  
**re:** Level II PostScript support for Apple LaserWriter IIf printer  
**source:** mail

Rudy Kohut of Victoria, Australia, wrote regarding a problem he was having with ProWrite and his Apple LaserWriter IIf PostScript printer. He was having problems getting a reply from New Horizons, and wondered why as he normally has been impressed with New Horizon's prompt support. He went on to ask me if I knew of any solutions. I sent Mark Thomas of New Horizons a fax regarding Rudy's problem, and he commented that he didn't understand why there would be no response to his letters. He also replied that "We did not have access to a Level II PostScript printer when developing ProWrite 3.2, but we did add support for Level II PostScript. The lack of testing has left a bug in our PostScript Prep file in versions 3.2, 3.2.1, and 3.2.2 of ProWrite. This bug was subsequently fixed in the 3.2.3 and 3.2.4 releases. Rudy can update to ProWrite 3.2.4 by sending the Program disk and \$10 U.S. We will send out the new version." He also noted that there is a quick fix if Rudy wants to edit the PostScript Prep file. First, load the PostScript Prep file into a text editor or ProWrite, then search for the word "/systemdict". Remove the "/" so that the word "systemdict" starts the line. If you have a text editor that lets you jump to a specific line, the bug is on line 100. The address to send the update request is

New Horizons Software, Inc.  
Attn: ProWrite Update  
P.O. Box 164260  
Austin, TX 78716  
USA  
(512) 328-6650  
FAX (512) 328-1925

---

**product:** CBM 1082 monitor  
**re:** display quality  
**source:** mail

Douglas Thain of Madison, WI, writes with a hint that will allow you to get better quality out of an 1082 monitor when connected to an Amiga with an A520 video adapter. The 1082 monitor has a separate luma/chroma mode and any monitor with separate luma/chroma connections will work with this trick. Connect the monochrome output from the jack at the back of the Amiga to the luma jack, and the color composite output from the A520 to the chroma jack. There will still be a small amount of color bleeding, but the picture is a vast improvement over a standard composite display. He goes on to comment that if you are working regularly with broadcast video, you only need the 1082 for both the video and Amiga screen outputs.

---

**product:** PLAYFIELD! newsletter  
**re:** mail trouble  
**source:** mail

Ryan Scott, Editor of the PLAYFIELD! newsletter, wrote to note that due to a misunderstanding at the Post Office, several people who wrote had their mail returned. The problem has been resolved, and if you had your letter returned, or you wish to contact Ryan, you may write to:

PLAYFIELD!  
5180 N.E. 6th Ave  
#624  
Ft. Lauderdale, FL 33334  
(305) 491-9770

---

**product:** AmiGantt  
**re:** update  
**source:** E-Mail

In E-Mail, I received a letter from Donald R. Tolson, the author of AmiGantt project management software for the Amiga. He writes that there is a new version of AmiGantt — 4.02.00 — which has been uploaded to CompuServe. It repairs a lot of the problems with 4.00.00, especially the bug he referred to as "the dreaded black screen syndrome." There are also a number of enhancements that have been added. He noted that registered users interested in getting a copy of the source can contact him either by mail, or through CompuServe @ 71310, 2165.

---

**product:** STU  
**re:** upgrade  
**source:** E-Mail

Also in E-Mail, Tony Preston of Custom Services in Moorestown, NJ, writes to announce a free upgrade to STU, the Amiga Diagnostic software. STU is a diagnostic for memory and disk drives which does a complete system test. All available memory is tested, and STU will test any memory or disk drive AmigaDOS can use. Upgrades are available on a BBS that registered users of STU may call. To make this service available, you must login as new, and send mail to the sysop stating your registration number. When you call, hit return a couple of times and then "L" to start the login process. Updates to STU, the documentation, and technical support are available to registered users only. Owners of STU who do not have a modem or do not wish to call, may send in their original disk to upgrade to version 6.8. If this is their first upgrade, they will receive it for free. Users of versions earlier than version 6.0 must pay a \$10 upgrade fee. Users sending in their disks should also enclose \$3 for shipping and handling. Tony also noted that he is working on version 7, which includes diagnostics for the custom chip set. That update is expected to be available in January 1993.

Custom Services  
P. O. Box 254  
Moorestown, NJ 08057  
(609) 654-7659  
BBS (609) 953-8159.

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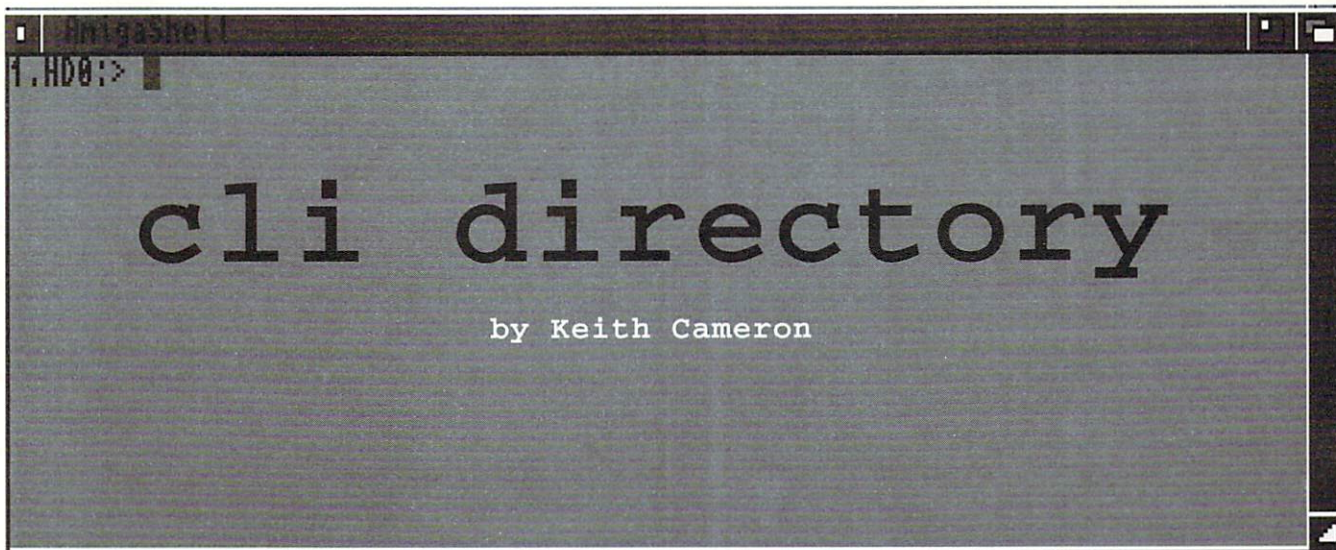
If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner  
c/o Amazing Computing  
Box 2140  
Fall River, MA 02722

...or leave EMail to John Steiner on Portal 73075,1735 on CompuServe; Internet mail can be sent to John\_Steiner@cup.portal.com

Fax John Steiner at  
(701) 280-0764





## The CLI and Shareware

Commercial software is expensive. That's not to say that such software is overpriced, although certainly there are items that are priced too high. Depending on the program you need or want, you could end up spending hundreds of dollars for a program contained on a single diskette. There are alternatives to spending large sums on commercial software, though.

Freely redistributable software can be acquired from a number of sources—from magazines, such as the Fred Fish collection in *Amazing Computing*; from computer user groups, and from electronic bulletin boards, to name just a few. Such software can be either free or very low in cost. In most cases, the author has copyrighted the program, and the program includes the copyright notice. Such software is referred to as shareware. The user is allowed to try the program first to see if it is something that he or she might want to use. If the program is found to be useful, then the user is expected to send in payment. A specific payment is sometimes suggested in the documentation, but at other times the user is asked to simply send in what he or she figures the program is worth.

Another type of freely redistributable software is freeware. Like shareware, freeware is usually copyrighted. Unlike shareware, though, freeware is given freely, and no payment is requested or expected.

Still, another category of freely redistributable software is that which has been placed in the public domain. The author has surrendered his or her rights to such software. Thus, the software belongs to the public, so to speak, and no payment is necessary.

In dealing with freely redistributable software, there are several things to remember. All files, including documentation, should be kept intact and passed along. In fact, several software programs state this as a condition of their being redistributable. In

the case of shareware, remember that software authors spend considerable time and effort creating these programs. They should, therefore, be compensated for their labors. Although it may be tempting to neglect sending in payment, remember that if most people were to do so, these authors would have little, if any, incentive for continuing to produce such programs. Finally, such software cannot be resold for profit. There are situations where it is legal to reproduce such software for cost, but no profit is to be realized.

For matters of simplicity, for the remainder of this article, I will refer to all freely redistributable software as shareware, because the majority of such software falls into this category.

Regardless of how you obtain a shareware program, being familiar with AmigaDOS can help you considerably. This is especially true if you obtain individual programs rather than a disk full, as you probably would when accessing a computerized bulletin board.

Most shareware these days is accompanied by a documentation file of some sort. To learn what a program is for and how to operate it, you need to read this documentation. If you have obtained a collection of programs on a single disk, this may not be any problem, for often such collections are programmed so that you can simply click on documentation files from the Workbench. Thus, you



do not even have to access the CLI. In most other situations, though, you will need to use AmigaDOS.

Documentation files are normally easily identified by their ".doc" suffix. To read such a file from the CLI, you will need to use either ED, the Workbench's text editor, or TYPE. For reading purposes only, TYPE is faster than ED.

As with all AmigaDOS commands, to learn how to use the TYPE command, you should examine its template and format. I'll leave that for you to do on your own, as this procedure has been thoroughly covered in previous articles. For simply viewing a file, just enter the word TYPE, followed by the name of the file you wish to view. Of course, be sure to include the proper path if the file is not in the current directory. Below is an example:

```
TYPE PROGRAM.DOC <RETURN>
```

For those of you with only one drive, you may wish to refer to my article in the January issue to discover how to create a RAM disk to hold TYPE and other AmigaDOS commands so that you can inspect other disks without a lot of disk swapping.

There are many other text file viewers in the shareware market as well. Some of the more well-known ones are *Less*, *MuchMore*, *PPMore*, and *PReader*. Any of these will make it quite simple to view document files that accompany many shareware programs. However, not all of them have the ability to print such files, so you may have to revert to using TYPE in such instances. For some programs, it is convenient to have a hard copy of the instructions available.

Some documentation files contain a great deal of information that is not absolutely necessary for operating a program. Sometimes, I like to delete this material from a copy of the document so that I can print out a hard copy containing only the information I need for using a program. In such cases, I often use ED or another text editor to delete any material that I do not want. Then I can print the document using TYPE or the text editor, if it has such an option.

Another type of program necessary for use with shareware programs is an archiving or compression program. This is especially true for programs that are uploaded and downloaded via electronic bulletin boards, but it is also true of many shareware disks that you order or receive in magazines. Some programs are stored on bulletin boards and diskettes using archiving programs in order to save space. For example, on a recent diskette I received from AC's *TECH*, all of the programs were archived, thereby enabling the diskette to

---

## Some archiving programs, like LHarc, do an excellent job of compressing a great deal of data in a small space.

---

After you execute the above command, the contents of the documentation file will quickly scroll up your monitor. To stop scrolling temporarily, hit the spacebar. To resume scrolling, you have three options: you can hit either the backspace key, the return key, or a combination of the control key and the "X" key.

It is not possible to manipulate the text in the file using the TYPE command. To alter the file, you would have to use a word processor or a text editor. You can print a copy of the document, though, by using the TYPE command. To do so, simply type the following:

```
TYPE PROGRAM.DOC TO PRT:
```

Newer versions of AmigaDOS have included MORE on the Workbench disk. This is a much more versatile command for viewing text files than TYPE. You use it much the same way as you do TYPE; that is, you type MORE followed by the name of the file you wish to view. Once the file opens via the MORE screen, you will have no trouble whatsoever discovering how to use this simple text viewer. It is very user friendly and can be operated via the mouse. Older versions of AmigaDOS do not have this command, although it has been a common feature on Fred Fish disks and bulletin boards for some time now.

contain more data than it normally could. An archiving program is one that can compress the data. In order to use such a program, it is necessary for the user to decompress it. There are a couple of shareware programs on the market that are able to use an archived program in its compressed form, so to speak, but the vast majority must be decompressed first.

The two oldest archiving programs that I know of for the Amiga community are ARC and ZOO. For anyone using BBSs and shareware, it is best to include these two programs in the 'c' directory of your bootdisk. There are many other archiving programs that have popped up recently, and you can usually find one or two in the latest additions to the Fred Fish collection; the most popular of the new ones seems to be LHARC. It is easy to identify which archiving program has been used to compress data, for the name applied to the program will contain a readily identifiable suffix. For example, a program compressed using ZOO would end with ".ZOO," and one compressed using ARC would end with ".ARC."

Archiving programs vary in their efficiency. Some, like LHARC, do an excellent job of compressing a great deal of data in a small space. Sometimes compression efficiency is provided at the cost of speed, and such programs can require a considerable amount of time to compress data. Others don't do as good a job of compressing, but they are faster. Some programs have a great many options, such as allowing you to list files that are compressed and their



respective sizes, while others will only allow you to compress and decompress programs. For the novice user, the two most important functions, though, are compressing and decompressing.

With most archiving programs, the user must operate from the command line. As with other AmigaDOS commands, you start with the name of the command first. Following this, you instruct the program as to whether you are going to compress ("add" in archive language) or decompress ("extract"). You then indicate the file you wish to work on. Thus, a command might look something like this if you are using ZOO:

```
ZOO E FILE.ZOO <RETURN>
```

In this example, the "E" stands for "extract." Thus, "FILE.ZOO" is a file which has been compressed and needs to be decompressed in order to be used.

Perhaps, though, I'm getting a bit ahead of myself. Before actually executing the command, you should create a directory to hold the contents of the file, for it will probably contain the program itself, a documentation file, and possibly several files, such as the source code of an icon. By creating a directory, all of the files can be stored neatly rather than scattered about the root directory of a disk. Once the directory is created, you should then CD to that directory. This means you will have to use the complete path name for the archived file in the command line.

To compress a collection of files into one file, you should collect all of them into a single directory. Then CD to the directory where you want the archived file placed. After this is done, you are ready to execute the following command:

```
ZOO A FILE.ZOO DIRECTORY/ <RETURN>
```

In case you have trouble with these archive programs, you can simply call up their templates and formats in the normal fashion, as with most AmigaDOS commands.

Those of you with a single drive system will find using archival systems rather difficult, but it is certainly possible. The best approach is to make all of the necessary commands resident in your RAM disk and then operate from there. For older systems, refer to my January article for creating a RAM disk; for newer versions, there is a letter in "Feedback" in the March issue that may help.

Once you unpack programs that you get via a bulletin board or other source, I would suggest that you run the programs from the CLI. To do so, just use the RUN command followed by the program's name. It is possible to just type in the name of the program on the command line and then hit return, but by using the RUN command, the CLI window you are working from does not revert control. With some shareware programs, things go haywire from time to time and the computer will freeze up. If you had not used the RUN command, you might have to give your computer a warm boot to continue. When using the RUN command, you should be able to return to the CLI window and continue.

If you live in a city large enough to have an Amiga bulletin board, or a general bulletin board that has an Amiga section, you have a great source for some very good software at a very reason-

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able cost. Of course, the first things you need are a communication program and a modem. Once you master these and get online with a BBS, you can then start downloading programs to build up your library. If you do not already have a decompression program, this should be the first program you download. From there, you can download and start collecting some useful software. To get an idea of such programs, browse through the Fred Fish Collection at the back of this magazine. You will see there a variety of programs ranging from word processors to games to utility programs. All of them can be yours if you know how to use AmigaDOS.

•AC•

Please Write to:  
Keith Cameron  
c/o Amazing Computing  
P.O. Box 2140  
Fall River, MA 02722-2140

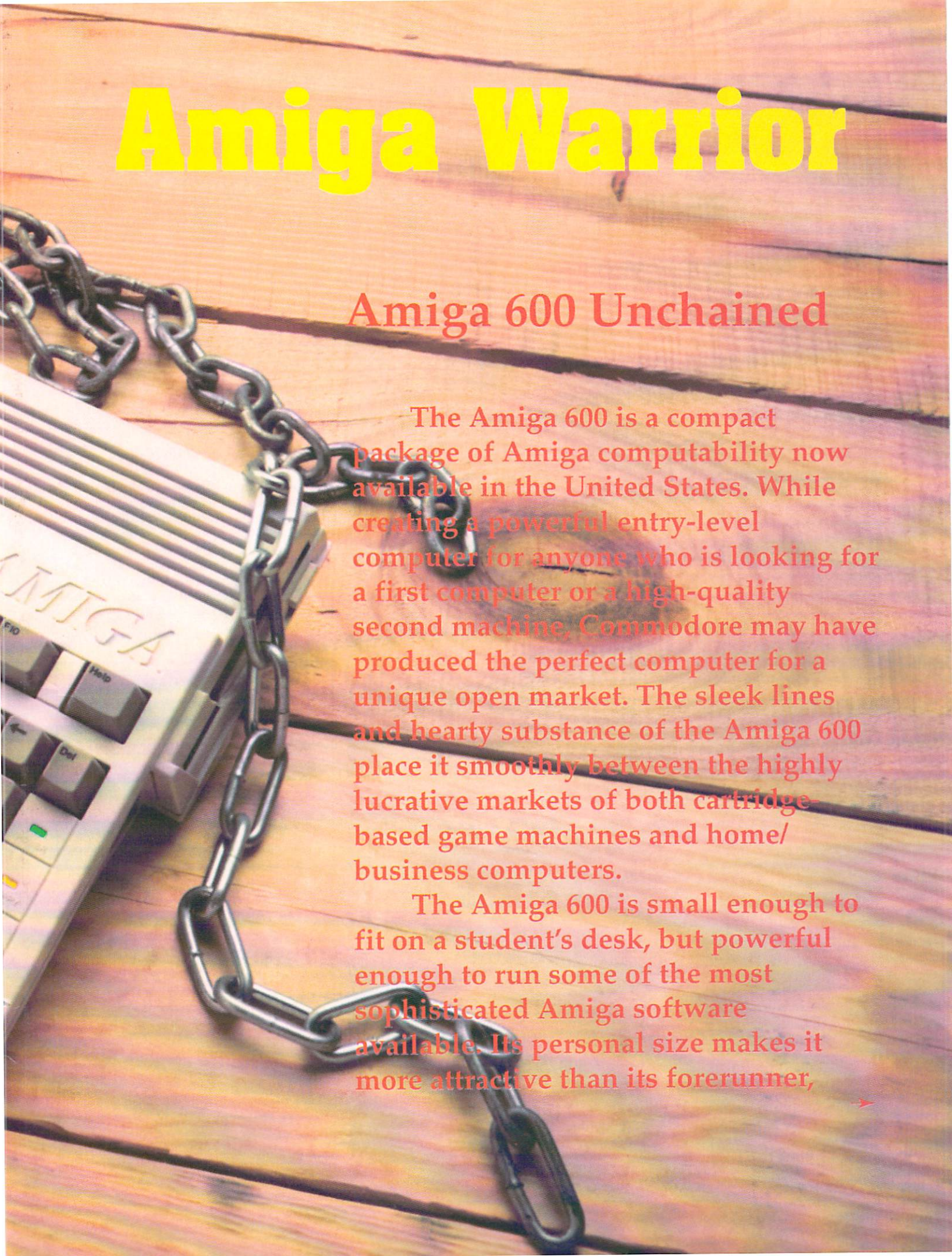






# Amiga Warrior

## Amiga 600 Unchained

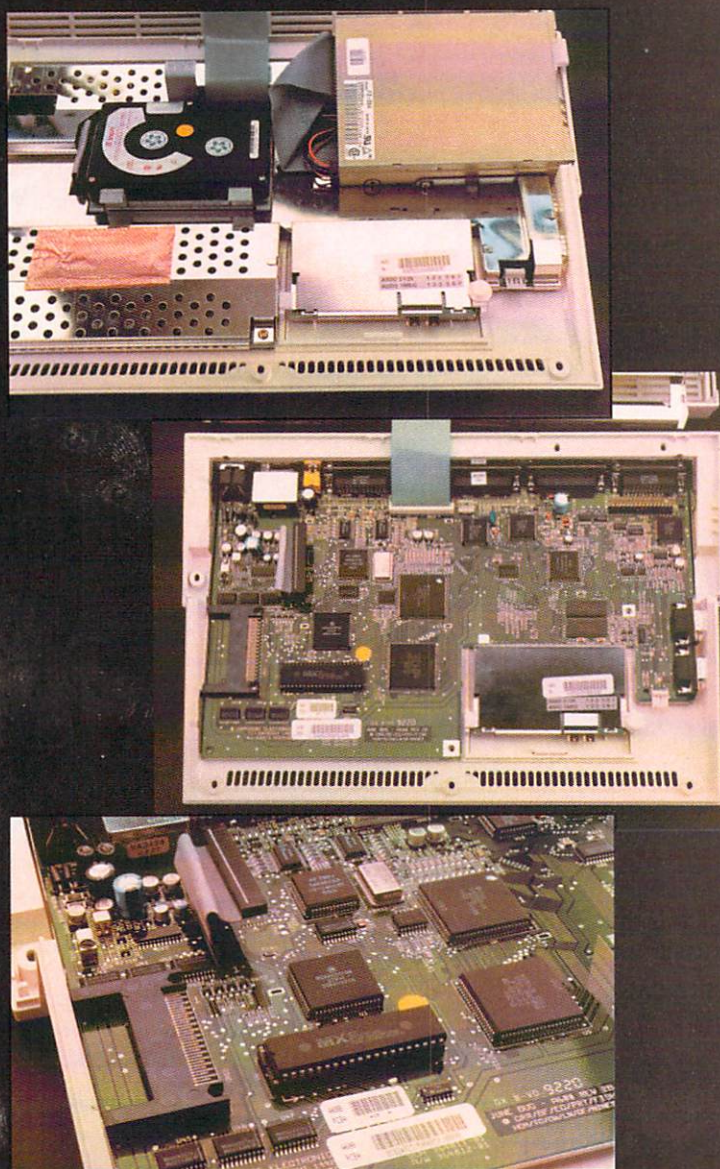


The Amiga 600 is a compact package of Amiga computability now available in the United States. While creating a powerful entry-level computer for anyone who is looking for a first computer or a high-quality second machine, Commodore may have produced the perfect computer for a unique open market. The sleek lines and hearty substance of the Amiga 600 place it smoothly between the highly lucrative markets of both cartridge-based game machines and home/business computers.

The Amiga 600 is small enough to fit on a student's desk, but powerful enough to run some of the most sophisticated Amiga software available. Its personal size makes it more attractive than its forerunner,



# Inside the Amiga 600



## Amiga Technology-Smaller Is Better

Advanced technology is incorporated by Commodore in the design of the new Amiga 600.

Top: The small 40 Mb hard drive as well as the slant mounted 3.5" floppy drive and the extra shielding allow the Amiga 600 to pack more computer in a smaller package.

Center: The Amiga 600 motherboard provides connections to ports, drives, and expansion in almost every direction. The A601 memory upgrade card is inserted in the small area beneath the shielding in the lower right corner of the board.

Bottom: The new surface-mount technology is designed to lower cost of manufacturing and increase product dependability. The only device with a dip-style design on the new motherboard is the ROM. The ROM is designed to be easily upgradeable.

the Amiga 500. Discarding the A500's large case and separate numeric keypad, the designers of the A600 have opted for an integrated keyboard design reminiscent of the early home computers.

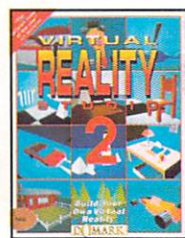
This aesthetic change has meant the loss of the use of special Hot Keys to some programs, but the end result is a small, less imposing design for Commodore's entry-level Amiga. The smaller case will not only be more appealing to home users, but the added flexibility of an internal hard drive and a small case will make the Amiga 600HD an asset to anyone who requires Amiga presentation power in a more mobile format.

Initial pricing for the two units places them on the high side of this market strategy. The Amiga 600 will have a Manufacturer's Suggested Retail Price of \$499.99. The Amiga 600HD will be listed at \$749.99. Both machines will initially come with an assortment of software packages to get the new user going (please see the side bar on this page).

## Evolution instead of Revolution

The Amiga 600 is an example of the continued effort to increase the sophistication of a design rather than the sporadic attempt to completely redesign a product. While there are many innovations in the Amiga 600's design, there is very little that is new to the Amiga. This will disturb some Amiga users who have been patiently (or not) waiting for a redesign of the disk drive and graphics display, as well as other aspects of the current system.

## Free Amiga Software!



For a limited time, Commodore is offering the Amiga 600 and the Amiga 600HD with special software bonus packages. With one machine aimed at the entertainment market and the other at the entry-level multimedia consumer, the free software varies between each Amiga.

The Amiga 600 will come with the games *Robocop 3* by Ocean, *Shadow of the Beast 3* by Psygnosis, and *Myth* by System 3. Domark's *MicroText*, an Amiga wordprocessor, and *Graphic Workshop*, a paint program, will be included in both Amiga 600's.

The Amiga 600HD will include the two Domark application programs plus the puzzle *PushOver* by Ocean and *Virtual Reality Studio 2* by Domark. *Virtual Reality Studio 2* is a basic 3-D design packages that utilizes menu screens and real-time imaging to create basic 3-D graphics and animations.



Instead, Commodore has opted to decrease the size and improve the board design. Surface-mount technology has offered Commodore the answer to both needs. With the exception of the ROM, all circuitry is soldered to the motherboard. While this makes updating chips a more complicated process, it does keep the components firmly seated on the board and decreases a major cause of failure on consumer machines—dislodged chips.

The Amiga 600's ROM is still in DIP circuitry. This allows quick updating to the new operating systems as they become available. However, all other chip style upgrades must be performed by either exchanging the motherboard or, if possible, utilizing the memory card area.

Like the Amiga 500, the A600's RAM can be increased with the installation of an optional memory card. The current configurations would allow the base 1MB Amiga 600 to be expanded to 2MB of on-board RAM using the A601 memory expansion card from Commodore. Although the memory expansion should be as high as the 9MB available on the Amiga 500 (and some sources say that this is possible), Commodore reports only the 2MB memory expansion limitation.

The Amiga 600 contains the standard composite video and RGB video ports; however, it also has a built-in RF modulator for connection to a standard television. This variety of output makes the Amiga 600 just as useful in the boardroom as in the living room.

## Basic Features

The standard Amiga 600 contains an 880K formatted 3.5" floppy disk drive and the new standard AmigaDOS 2.05 operating system. It has a programmable parallel port as well as a programmable serial port with a 31,250 rate. As in all previous Amiga models, there are two control ports for mouse/joystick, graphics tablet, or lightpen. Stereo audio and both RGB analog/TTL or color composite video round out the list of standards Commodore's latest Amiga entry carries.

The Amiga 600HD is the same as the Amiga 600 except that Commodore U.S.A. has added a 40MB hard drive (European models sported only a 20MB drive). This was made necessary by the demands of the less game/more productivity driven U.S. market. It is important to note that Commodore was not only aware of the need, but supplied an answer.

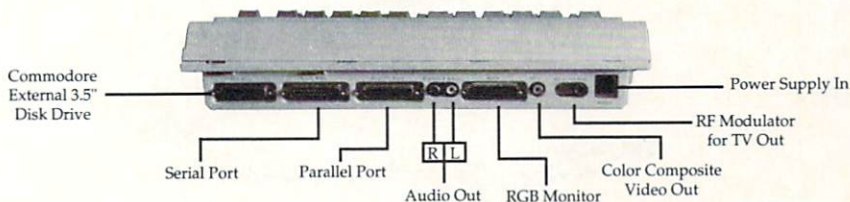
One major aspect that was carried from the Amiga 500 design to the Amiga 600 is the power supply. The brick is still with us. Commodore has not only not changed the outward appearance of the bulky device, but the power switch remains on the external power supply.

While this makes some sense in lengthening the life of the power supply, it still makes it cumbersome to cold boot during a session by climbing under the desk to switch the power supply off and on. A switch incorporated in the base of the Amiga 600 to interrupt the power supply would have been a nice feature.



The Amiga 600 places the mouse/joystick ports on the same side as the 3.5" drive slot(left) while the left side port (above) is used for the new PCMCIA smart card.

## Amiga 600 Rear Ports



## A New Slot!

The expansion slot available on the side of the Amiga 500 has been replaced with a connector for the PCMCIA standard. This is the standard for credit-card-sized devices available for memory upgrades, battery backed storage cards, program cartridges, and even devices such as modems. The slot on the Amiga 600 will allow developers to create software that is—almost—pirate-proof.

There is even the possibility of compatibility with CDTV applications. However, the original A570 CDTV expansion for the Amiga 500 will not work on the current Amiga 600. As of yet, Commodore has made no announcement concerning a CDTV expansion device for the Amiga 600.

This also means that the wealth of Amiga 500 expansion hardware will not work on this new system. This will cause some developers major problems.

When the Amiga 500 was introduced, it was discovered that the expansion port was directly opposite of the older Amiga 1000. Developers were able to quickly adapt for the change by reversing their ports for the Amiga 500 peripherals. With the change in the Amiga 600, hardware developers will need to apply a little more effort to create peripheral products.

Fortunately, the Amiga developer community has been gifted by a remarkable amount of development for the Amiga 500. This market is important to these companies. It would not be surprising to see some hardware expansion devices created for the Amiga 600 on the market by Christmas.

The lack of an expansion card slot will not affect the large assortment of peripherals (and dongle-required programs) that utilize the serial or parallel ports.

## What Can We Expect?

Commodore remains tight-lipped on any other improvements planned for the Amiga line. Their development in the past has been to introduce newer designs in the foreign marketplace rather than in the United States. With the Amiga 600HD, the North American consumer has enjoyed the fruits of this market beta testing by the increased hard drive size.

The pictures and specifications noted above were available from Commodore with the warning that the actual product may change by the time it is shipped. However, there is no real reason to believe CBM will make any radical changes to a design they have been marketing in Europe for the past several months.

The Amiga 600 incorporates enough minor changes in design and corrections in problems to make it a noteworthy addition to the Amiga line. For many Amiga 500 users, the changes will appear minor and even (e.g., the deletion of the expansion slot) unnecessary. More users may feel that a high capacity disk drive, improved graphics resolution, and a faster processor would have been necessary improvements.

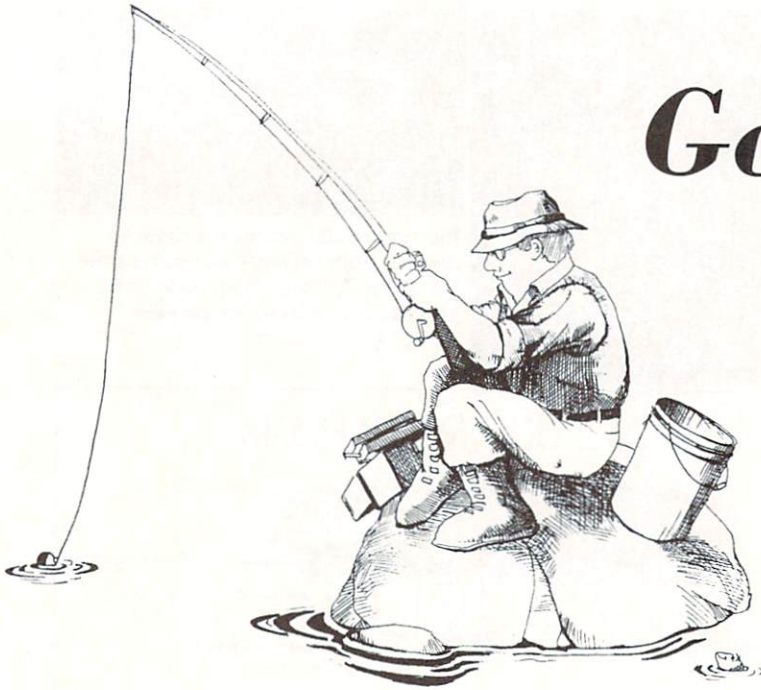
It is apparent that Commodore wanted to maintain as much software compatibility as possible with this design. While there have been some software incompatibilities reported, the majority of properly written software should run effectively on the Amiga 600.

The Amiga 600 is an Amiga Warrior that offers an enormous opportunity to Amiga computing and the consumer market. Its size, design, and wealth of software titles make it an extremely acceptable alternative to the latest cartridge-style game machines.

•AC•



# Goin' Fishin'



drove down there. After the meeting I announced that I had these disks, and told everyone that they could copy them if they wanted. Well, they went nuts! After the meeting, everyone was busy copying my disks. After that, it became a tradition that whenever I went to a meeting, I'd bring more disks, and it escalated from there. My goal in the beginning was to make only a few disks a month because I spent a lot more time on each disk then than I do now.

**Q.** Fred, when did you first become interested in the Amiga computer?

**A.** I first started hearing about the Amiga in 1985—about six months before it actually appeared in the stores. I read a lot of articles about it and when I finally saw a demo of it firsthand, I thought it was a neat toy. I pulled out my plastic, said “charge it,” and for the next couple of days, I called in sick so I could stay home and play with my new computer.

**Q.** How did the Fred Fish Library come about?

**A.** When I bought my Amiga, there was virtually no commercial software available, and I really wanted to run some other programs that I had source code for. I managed to find a C compiler, took it home, and started playing with it. I had to experiment with it because it didn't come with any instructions. When I got it working, I ported over some public domain shareware I had on my UNIX system and started putting together a little tool set for me to use. I really wasn't thinking about making a library at the time. After all, I thought that if I was doing it, other people must be doing it too. A little later, I decided to put all my programs together on some disks and give them away. At the same time I heard about a user group in Palo Alto which, by the way, was the very first Amiga user group. So I took my disks and

**Q.** How do you get your programs?

**A.** When I first started the library, I actually had to go out and track down programs. I'd look on bulletin boards and try to find people who were willing to release their code. All that changed after the first 50 or 100 disks, and then people started sending me submissions. Within the last year or so, it's reached the point where I hardly ever bother trying to download from other places, such as BBSs, because I receive about 60 to 100 submissions each month—and I hardly have time to go through those. I guess that about only half of what I get in the mail actually makes it on to one of my disks.

**Q.** How much time do you spend on your library?

**A.** I probably spend on the average of three or four hours a week organizing the new disks, and another 10 or 15 hours answering questions and shipping the disks to subscribers.

**Q.** How many subscribers do you have?

**A.** At any one time it averages only about 75, but I would imagine that there are probably 50,000 or 100,000 copies of each of my disks somewhere in the world. They

Every computer system has grown up with a body of professionally designed, non-commercial software available either for free in the public domain or for a small price as shareware. The Amiga is no exception. Almost from the beginning when there was hardly any software at all, dedicated programmers began introducing these programs. But unlike other platforms, the Amiga appears to have developed a dedicated and structured premiere distribution network for these programs in the form of the 600-plus disk Fred Fish Library.

For years, Fred Fish has been the *de facto* keeper of the best of the public domain programs. Copies of his disks probably number in the millions and can be found all over the world. I have long wondered exactly who he is and why he was doing this. Not long ago, I had the opportunity to sit down with him at his home in Tempe, Arizona, a suburb of Phoenix. In real life, Fred is a software consultant who works primarily on UNIX debuggers. What follows is the essence of the revealing interview with a person to whom I'm certain we all owe a debt of gratitude.



# An Interview With Fred Fish

by Steve King

seem to be pretty popular, particularly now that they are available on CD-ROM.

**Q.** *How do you feel about the quality of the programs in your library?*

**A.** There are certainly a large number of programs available on my disks that are close to or are of commercial quality. In fact, in some cases, they even exceed the quality available in commercial packages. I know there are many Amiga users who don't have any commercial software at all, and just use freely distributable software, whether it's from my library or from other sources. There is an enormous amount of [public domain] software available and I try to place only high quality software in my library.

**Q.** *Couldn't you make a lot of money doing this commercially?*

**A.** If I wanted to turn it into a business, I could have retained a compilation copyright on the entire library. Then nobody else could have distributed the disks except for me. But if I had done that, I don't think my library would have grown as big and become as popular as it has. I know for a fact that there are people who commercially distribute hundreds of thousands of my disks, but that doesn't bother me at all. I didn't start this off to be a business—I just felt it would be something useful for the whole Amiga community.

**Q.** *Are there any particular people you'd like to thank?*

**A.** I'd just like to acknowledge the hard work of everyone who has gone to the trouble of writing freely distributable software for my disks. Without their efforts there wouldn't be any library, as I certainly couldn't have written all this software by myself. So, in a very real sense, I'm more like a caretaker. Without the help of the

user community—their collective efforts—the library simply wouldn't exist. Therefore, I would just like to express my appreciation to everybody who submitted material or who will submit material in the future.

**Q.** *Are you getting tired of doing this?*

**A.** At times, I do, but it's primarily a hobby for me. I really enjoy the time I spend doing it because it means I'm not doing something else. Sometimes my other work is pretty stressful, and this is not as demanding. It's kind of grunge work. I just sit down and do it and can do something else, like watch TV, at the same time.

**Q.** *When do you think that you'll distribute disk number 1000?*

**A.** It's been five years since I started and there are now about 600 disks. So, probably in about three years, since I've

been distributing 10 to 20 disks each month. I never expected it to reach 50; and then I never expected it to reach 100—or even 200. It seems like every year what I foresee as the upper limit keeps getting higher and higher. Who knows where it will end?

*With any luck at all, Fred Fish and his library will probably outlive the Amiga.—SK*

## Where to Go Fishin'

You can order the Fred Fish Library on 3.5" diskettes directly from:

**Fred Fish**  
1835 E. Belmont Drive  
Tempe, AZ 85284

*Amazing Computing* also offers the complete line of Fred Fish disks. See an up-to-date index of Fred Fish disks on pages 94 and 95 of this issue or consult AC's GUIDE for a listing of the entire collection.

•AC•



Fred Fish at work.



# GAME CREATION WITH AMOS

Inside every computer gamer lurks a frustrated author. You may be blasting aliens left and right in the latest hot arcade game, or wandering dungeon level 20 in search of Foozle, the Mad Wizard in the newest role-playing fantasy adventure, and you say to yourself, "I can design a better game than this. I would have the interface look this way, and the monsters would be smarter, and the puzzles would be harder, etc." Unfortunately, for those of us who have never progressed past programming in BASIC or beginning C, converting our great ideas into computer code has been too daunting a task. This is no longer true. With the arrival of AMOS from Europress Software Ltd., our ideas can become reality. AMOS is a programming language that utilizes syntax and program structures similar to BASIC, but AMOS is as much an improvement over AmigaBASIC as the Amiga was over the C-64.

images which cannot be reproduced in a magazine listing. Instead of loading a sprite image file, we draw a series of arrows onto the screen and save them as Bobs using the GET BOB command. To achieve an animation effect, we draw four slightly different arrows pointing to the right, and four arrows pointing down, for a total of eight Bobs. What about the left and up arrows? They will be taken care of later in the program. After drawing some boxes on the screen, we define some Screen Zones. AMOS allows you to create rectangular detection zones (as many as you want), so it becomes very easy to determine if a Bob or Sprite or the Mouse has entered an important part of the screen.

Next, we set up the double buffer system. AMOS allows for some flexibility in handling the double buffering. Synchronizing drawing operations on the screen, opening and closing windows,

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## AMOS is billed as "The Creator," and games creation is what it does best.

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AMOS, with its over 500 commands, contains many features that should have been supported in AmigaBASIC but weren't, such as IFF save and load commands, sub-menus, and many graphics-handling capabilities. Can you believe setting up double-buffered screens, or dual-playfield mode with a single command? AMOS is billed as "The Creator," and game creation is what it does best. I wanted to create a graphic adventure game in the style of the "Quest" series by Sierra On-Line. These games use a graphic interface consisting of a full screen display of a location which the character figure navigates using the mouse or cursor keys. A dialog window opens at appropriate times to give text descriptions of objects and events. Additional commands are typed in and appear in a command line at the screen bottom. Other game features are accessed with menus or control key combinations. This article will describe how such a graphic interface is easily created using the power of AMOS.

The program listing below is a basic framework for a graphic adventure game and illustrates some of the many features of AMOS. For this example, very simple graphics will be used. Of course a real game would utilize IFF screens, for which AMOS includes some powerful PACK and UNPACK commands, and banks of sprite

and moving Bobs about is a complex task. AMOS makes it simple. The AUTOBACK command allows you to perform the operations in a mode that works best for your particular program. For this example, we use AUTOBACK 0, which gives the programmer complete control over the double buffer process. The Bobs are updated on the hidden screen, the screens are switched, and, after waiting for the vertical blank period that returns the electron beam to the top of the screen, the Bobs are updated on the newly hidden screen. After setting up the screen, the program enters a DO...LOOP where it waits for your input. The REPEAT...UNTIL loop monitors for either a keypress or mouse click. Once some input is detected, it is evaluated and the appropriate procedure is called. AMOS procedures are much like subroutines in BASIC, except that any variable used in an AMOS procedure is local to that procedure unless otherwise defined.

The rest of the program consists of the procedures that perform the actions of the program. These are some basic routines you may want to use. Pressing one of the cursor keys calls the MOVEIT procedure. This sets the arrow figure in motion and starts the animation. This will continue until you either hit another key or the arrow strikes one of the screen zones. Motion and animation are



# A graphic adventure game template using the AMOS programming language

by Jack Nowicki

achieved by continually updating the Bob position and image with the BOB command. Each cycle, the x- or y-coordinate of the Bob is incremented and the Bob image is changed.

Now I'll explain why we can get away with having only right and down arrow images in our sprite bank. When using the BOB command, adding a value of \$4000 to the sprite image number causes that image to be vertically flipped. Adding \$8000 to the sprite image number reverses the image horizontally. In our program, if the left cursor key has been pressed, \$8000 is added to the image number. If the up cursor key has been pressed, \$4000 is added. This is a pretty handy memory-saving feature of AMOS because now only half the number of sprite images need to be stored.

Opening dialog windows to display messages on the screen is handled by the MESSAGE procedure. Just enter your message in the global variable TS and call the procedure. The window opens and your message is displayed until a key is pressed. The MESSAGE procedure features word-wrapping and auto-sizing of the dialog window.

Typing a letter calls the COMMAND procedure. A command line window is opened and accepts your input. Once the command is input, you will need to send the command to a parser routine which evaluates it. I did not include a parser in this example. I don't want to take all the programming fun away from you. Let me reassure you, though, that AMOS contains abundant string handling commands that make writing a parser routine a less fearsome project. The program template presented here illustrates how AMOS allows you to handle much of the tedious game set-up program steps with relative ease, leaving you free to concentrate on the enjoyable parts of your game, such as developing the sound and graphics you want to include. AMOS is the programming language that will encourage you to dust off all those game ideas you've been accumulating, sit down, and *create!*

AMOS  
Europress Software  
Europa House, Adlington Park  
Macclesfield, Cheshire  
England SK10 4NP  
011-4462-585-9333  
Inquiry #200

## Program Listing

```
'PROGRAM
'A Graphic Adventure Game template using AMOS
'
Dim LS$(10)
Global TS$,LS$()
Curs Off : Flash Off : Cls 0
'
'Load in the sprite data
'Normally you would in a sprite data file from disk
'with the LOAD command
'In this example we will create a sprite bank by
'drawing bobs on the screen and capturing them
'with the GET BOB command
'Place BOB hot spot at point of arrow
ARROWS
For I=1 To 4 : Hot Spot I,$21 : Next I
For I=5 To 8 : Hot Spot I,$12 : Next I
'
' Here you would load in the background screen, using
' the LOADIFF command, or better LOAD then UNPACK a
' screen saved in packed format as a .ABK file.
' For this example, we will use the default screen.
'
' Set up two screen zones
Reserve Zone 2 : Cls 0
Set Pattern Rnd(31) : Bar 50,50 To 100,100 : Set Zone
1,50,50 To 100,100
Ink 11 : Box 150,25 To 250,75 : Set Pattern Rnd(31)
Ink 13 : Paint 200,50,0 : Set Zone 2,150,25 To 250,75
'
' Initialize the double buffer system
Double Buffer : Autoback 0 : Update Off
Bob 1,150,120,1
Bob Draw : Screen Swap : Wait Vbl
Bob Draw
'
'MAIN LOOP
Do
Repeat
K=Asc(Inkey$) : C=Mouse Click : KS=Key Shift
Until K>0 or C>0 or KS=8
If C>0
'mouse button clicked
MOUSEROUTINE
Else
If KS=8
'control key pressed
'add your until control key combinations and
procedures here
Else
```

(continued on page 62)



# ARexx

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## IFF24 Viewers Using ImageMaster or ADPro, Directory Opus or a Shell, and the Firecracker 24

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THIS MONTH I want to share two utilities that I developed to ease the tedium when I'd rather be creating or viewing than messing around loading programs and processing files. My Amiga 3000 system has a *Firecracker* 24-bit display card (FC24 by Impulse), *Art Department Professional* (ADPro by ASDG), *Imagemaster* (by Black Belt Systems), and *Directory Opus* (DOPus by INOVATronics). If you have a Firecracker board and either ADPro or Imagemaster, you may find my IFF24 viewer to be just what you need when you are in a hurry to see a 24-bit picture. If you also have Directory Opus, it's even easier, as you simply select a file and click on a gadget.

We'll view IFF24 images on the Firecracker board using either ADPro or Imagemaster as the vehicle. You may launch the routines from a shell or you can highlight an IFF24 file in DOPus and then click on a gadget to view the picture. The automatic viewer in Directory Opus doesn't work with IFF24 files, and the "showiff24" program that comes with the FC24 board doesn't work properly if you use the Amiga Display overlay mode and two monitors. When you try to turn off the Amiga overlay with an "aoff" command, the display snaps to the wrong aspect. I wrote the routines so I can quickly show someone any IFF24 file on my RGB monitor. (The

programs work on regular IFF files, too.) They start up ADPro or Imagemaster with that picture loaded and displayed on the Firecracker.

The IFF24 viewers save time and tedium. I generate 24-bit IFF pictures in *Vistapro* (by Virtual Reality Laboratories), *Scenery Animator* (by Natural Graphics), *DCTV* (by Digital Creations), and *Light24* (by Impulse). I alter and process these images in ADPro and Imagemaster. I save the IFF24 files in a variety of directories, and, even with my best organization, I forget which picture is which. Before I went to 24-bit, I used *Imagefinder* (by Zardoz) to make little thumbnail pictures of my image directories, but alas, Imagefinder will not work with IFF24 either, so I "rolled my own" IFF24 viewer in ARexx.

If you are new to ARexx, these are challenging programs to get you started. If you are experienced, you may find that they give you ideas for different time-saving macros. (Note: Only library names, ARexx port names or addresses, and the names of logical files are case sensitive in ARexx. I use uppercase for ARexx instructions for readability.)

### IFF24 Viewer Using ADPro

The program ShowIFF24.rexx is meant to launch from Directory Opus or a Shell. In Directory Opus, we need to set up a gadget to run this program. Open the DOPus config window and select "gadget" (or menu if you prefer). Choose an empty gadget, put in a gadget name such as "ShowIFF24", and set the following options. Type in only the string that comes after the ':' as the Function string. 1) Function: rx ShowIFF24.rexx {f} 2) Select "Executable" (not ARexx) 3) Select "Run asynchronously" 4) Leave rest of settings at default.

The above settings accomplish several things. The most important is that the {f} in the function string allows us to pick up (as an argument) the path and file name of the first selected file in the active window. That is why it was necessary to make the function an "executable" and not an "ARexx" program. Note that the "executable" is really "rx" and that the actual ARexx program is simply the first "argument" for rx, while the path/filename represented by {f} is the argument for the ARexx program. The program would work if we specified it as "ARexx" in DOPus, but then we couldn't use {f} as a variable, containing the path/filename of the selected file. The {f} option only works with "executables."



# Projects to Challenge Beginners

by Merrill Callaway

This demonstrates the correct way to introduce a variable argument into an ARexx routine launched from DOpus. In general, use "ARexx" as the option only when you are writing a DOpus macro (directly controlling DOpus only); and use "executable" when you are writing an interprocess control ARexx program, and then launch it using "rx" in the function string. Always use "rx" and "executable" when you want to pass path/filename arguments to an ARexx program.

Running it "asynchronously" means that you can still use DOpus after the program starts and before the program exits. If you don't choose this option, then you must wait for the program to finish before you can use DOpus again. Generally, macros should be synchronous, and interprocess control (executable program launches) asynchronous.

The first few instructions of ShowIFF24.rexx accomplish our set up. OPTIONS RESULTS asks for replies to all commands sent out. PARSE ARG filename is the way we transfer the path/filename represented in the DOpus variable {f}. This is known as "passing

1	ADPro	DCTV	VistaPro2	PageStrm	AV	ZeroVirus	CheckBook	LMB
	IMaster	Light24	Scenery	PageLiner	Thinker	SysInfo	Mandel	
	BME	DPaintIV	ScapeMake	Grammar	PMaster	QB	MVsn.ieee	
	Imagine	DPaintIII	CellPro	Thesaurus	CanDo	ImageFind	IEEE.Hook	
	DigiView	DigiPaint	MakeANIM	FinalCopy	HOTLINKS	SCSI mount	CPLX.ieee	
	ShowIFF24	IM-Show24		TTX		Hex	HPprint	

Gadget name	IM-Show24			
Function	rx showiff24IM.rexx {s} {o}			
0 Stack size	4000	Priority	0	Close delay -1
1 Text colour	1	BG colour	0	
2 Shortcut key	0	Qualifier	0	<input checked="" type="checkbox"/> Executable
3 <input checked="" type="checkbox"/> Output window	<input checked="" type="checkbox"/> Run asynchronously	<input type="checkbox"/> Recursive dirs		
<input type="checkbox"/> Output to file	<input type="checkbox"/> CD source	<input type="checkbox"/> Reload each file		
<input checked="" type="checkbox"/> Workbench to front	<input type="checkbox"/> CD destination	<input type="checkbox"/> Auto iconify		
<input type="checkbox"/> Directory Opus to front	<input type="checkbox"/> Do all files	<input type="checkbox"/> No filename quote		

Next bank	Swap	Bank menu	Okay	Cancel
-----------	------	-----------	------	--------

The Directory Opus Config screen shows the settings to make for ShowIFF24IM.rexx, which views IFF24 images in Imagemaster



arguments," a concept you must be intimate with before you go very far with ARExx. Pretend that we selected a filename "bar.none" in a DOpus directory window called "Sys:foo/". Then [f] picks up the directory and the filename and puts it into a string as "Sys:foo/bar.none" and composes a command line: rx ShowIFF24.rexx "Sys:foo/bar.none". RX is an executable ARExx command utility that launches the ARExx program, ShowIFF24.rexx. The string after ShowIFF.rexx, "Sys:foo/bar.none", is the "argument" to the program. The line in the program PARSE ARG filename takes the argument string "Sys:foo/bar.none" and assigns its string value (its literal contents) to the variable filename. Note that ARExx doesn't require you to "type your variables." They are assigned their "type" at the time of assignment: filename starts out as type "character", a string. If later we put in a line filename=10.25 then suddenly filename becomes type "floating point." This is both a convenience and a liability! If you try for instance to do arithmetic on a string, you will get an error.

The next two IF blocks test for a null filename string. The first block is for when the program is used from a Shell window, and prompts for the filename if we forgot to put it in. The second block is in case we do not select a file first in Directory Opus. It puts a message in the top bar, and then exits with a warning flag (which isn't used, but it demonstrates the correct way to set a return code).

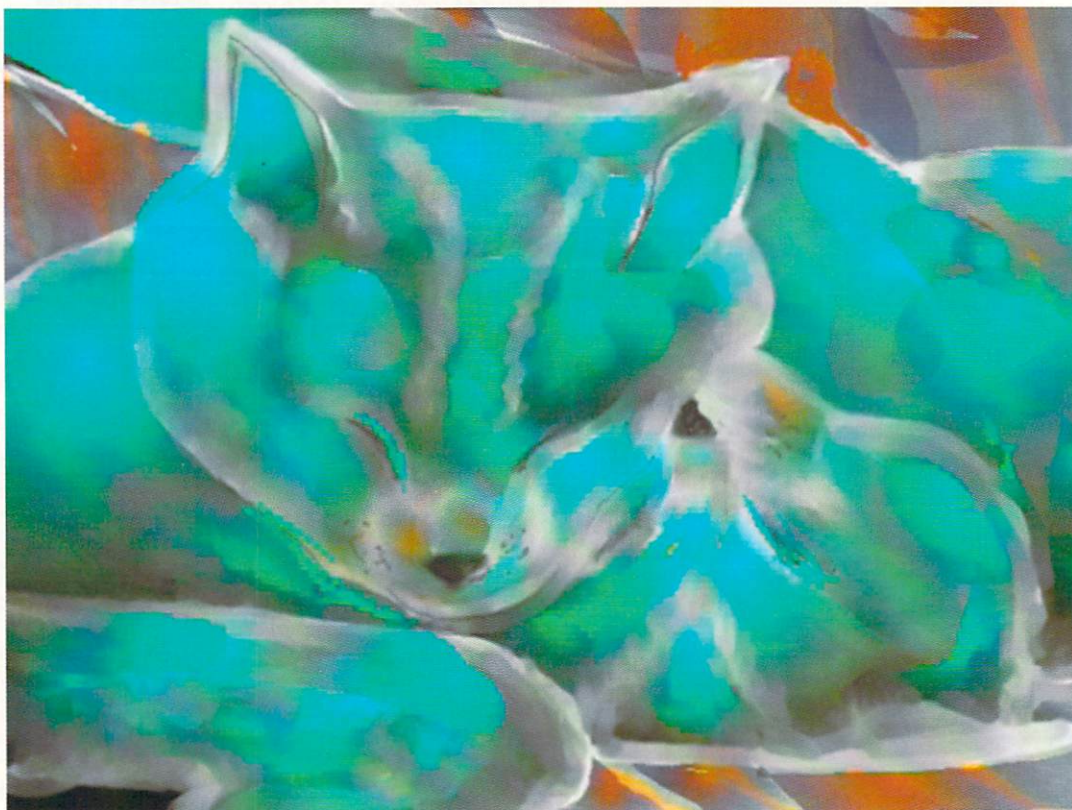
Next, we CALL an internal function to LOCATE\_ADPro. The program skips to the label Locate\_ADPro: and continues. Note that we don't need a PROCEDURE instruction, as we are not building a new symbol table. The program checks with a SHOW() function to see if ADPro's ARExx port does NOT exist. If not, it uses some ADDRESS COMMAND instructions to launch ADPro, and a WAITFORPORT command to wait until the port comes on line before proceeding, as loading a big program like ADPro takes a few seconds. This block of instructions is a good template for code that checks to see if some program is running or not. If all goes well, this

internal function RETURNS a 1 for true, ADPro is running. After the CALL gets a 1 RETURNed, it CALLs another internal function called MAKEIMAGE, otherwise (a 0 comes back) it exits with return code of 20.

Assuming we safely CALL MAKEIMAGE, we pass it an argument, filename. The program skips to the label MAKEIMAGE: which is a PROCEDURE with a protected internal symbol table. The first thing to do is to PARSE ARG filename exactly as we did in the main program. This "program within a program" shares the same format as the main program. Note that this internal filename variable is completely different from the one in the main program, however, because it is protected by PROCEDURE.

Now we ADDRESS 'ADPro', to make 'ADPro' the current host address—the address to which we send commands. 'ADPro' is case sensitive, hence the quotes. ARExx automatically makes strings UPPER case unless you quote them. The rest of the commands are internal to ADPro: we bring its screen to the front; change the LoadFORMAT to IFF, LOAD the file represented by the symbol token filename (a "symbol token" is a "variable" in ARExx-speak). Then ADPro performs an OPERATOR to DEFINE\_PIXEL\_ASPECT. This is the way ADPro gets information on the picture file. We simply need the image width and height, w and h. In the ADPro ARExx interface, ADPro\_RESULT is a symbol token assigned the value of the RESULT string coming back from a command's operation. We directly PARSE VARIABLE ADPRO\_RESULT and use periods (.) as placeholders because we don't care to use or assign the data in the other places. (See page 344 of the ADPro Manual.) In other words, there are six values returned by the operator, and we are concerned with the fifth (w) and the sixth (h) only. So what is the last period for? This period forces "parsing by tokenization," which is a fancy way of saying, "All surrounding blanks are stripped off the values of the variables w and h." Beginners, parsing is not a trivial subject and we don't have space to explain its details here.

"Russian Blues," a  
24-bit painting  
done in DCTV





For further reading, consult my book *The ARExx Cookbook*, Chapter Three, and you will soon be an expert at parsing.

We use ADPro's ability to put up a requester (page 378 of the ADPro 2.0 Manual) if it needs information, and we do that next, in case the picture width does not match one of the Firecracker's set widths. Note the logical operator &. Note the loop backwards to re-test input before proceeding. We use the ARExx SIGNAL instruction, which acts like a GO TO statement. This is a correct use of SIGNAL. You will get into trouble if you abuse SIGNAL as an escape from sloppy logic, however.

We set up the SaveFORMAT to the FC24 and proceed to save the image we have loaded. The information w and h are used to set the width and height of the FC24. The first "SAVE" turns on the FC24 and/or CLEARS any image on it. We could have used one huge line for these SAVE instructions, but it's easier to do several, to set up and then IMAGE. Note the proper way to continue an ARExx line with a comma. You generally don't need to continue a line except for publication or readability. The narrow columns of this magazine have made me an expert at line continuation. Breaking a line correctly is not always obvious, particularly if you are in the midst of a complex command string. Finally the program goes to the back or quits according to which line you "comment out" or leave in.

### The Same IFF24 Viewer Using Imagemaster

The same process is easier to implement (but runs more slowly) using Imagemaster. ShowIFF24IM.rexx shows how. We start off much the same, and parse the filename. This time, however, we need to split the directory path off from the filename, because that is the kind of information Imagemaster is looking for. So we have two arguments this time, filepath and filename. If filepath is the null string, then we use some prompts and some compound symbol tokens (arrays) to handle our path strings. We use parsing on a pattern because we know that all valid paths will contain one colon (:) and the directories will be delimited by slashes '/'. The code shows the constructs for tearing down a string into an array and then building it up again. When tearing it down, the symbol token device stands for the system device name, and the compound symbols path[j for j=1,2,... are the directories (the strings in between the '/s). After we've torn apart the path/filename, we know that the last increment is the filename itself, so we build up the string again except for the last increment, and this becomes the path name. The last increment becomes the filename. Note that pattern parsing removes the pattern itself from the parse string. So, during reconstruction, we add these characters back to the string using concatenation characters ||.

We are planning to run from Directory Opus a little differently this time, and open an output (Shell) window on the Workbench. We are also going to use separate path and file arguments directly from DOpus. In case we forgot to select a filename, we are not going to exit, but prompt the user for a filename in the source window. We should look at our DOpus setup now. If you're using a shell, then skip ahead.

In Directory Opus, set the config screen as follows: 1) Function: rx ShowIFF24IM.rexx [s] [o] 2) Select "Executable" (not ARExx). 3) Select "Run asynchronously" 4) Select Close delay = "-1" (The user closes the window.) 5) Select "Output window" 6) Select "Workbench to front" 7) Leave other setting on default.



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The [s] argument is the source (active) directory path string and the [o] argument is the filename string without its directory path attached. Once these arguments are passed to the program, the Imagemaster commands are simpler than the ADPro commands. We merely need to bring Imagemaster to the front, set the image path, and load the file. An optional AOFF command will turn off the Amiga display on the picture, but so will a mouse click. If you use AOFF, the overlay stays off; and if not, you may toggle it.

The last program is a very small utility A.rexx run from the shell, to find the addresses for all ports. I'm including it because I have yet to find in the Imagemaster documentation the name ('IM\_Port') of the Imagemaster ARExx Port! It's often easier and far safer to find the port of a new program directly rather than trust the manual which may be outdated or even incorrect. Also, your version of Imagemaster may use a different port name. Now you have a way to view IFF24 files on your Firecracker by selecting and clicking in Directory Opus, and using either ADPro or Imagemaster to do it.

### Listing One

```
/* showiff24IM.rexx shows an iff-24 file in ImageMaster */
/* when you select it in Directory Opus or if you run */
/* this program from a shell. */

/*
** The program with the Firecracker24 called "showiff24" doesn't work
** very well. If you use the overlay mode, and try to show a file,
** everything is OK until you send "aoff" to turn off the Amiga
** overlay.
** The picture snaps smaller than the screen, a most annoying bug!
```



```

** This program fixes all that, provided you have ImageMaster. It
uses ImageMaster
** to display iff24 files on the FC; a much better solution.
** May be run from Directory Opus by setting the gadget as "execut-
able"
** and then in the command line: RX sys:rexxc/showiff24.rexx (f)
** Set: output window, run asynchronously, and no filename quote.
** This allows the selected IFF 24 file to become an Argument to the
** program. It is then displayed on the FC24 after ImageMaster is
opened.
** May also be run from the shell with the file as argument, or the
** program will prompt you. If you run it from dopus w/o specifying
** (selecting) a file, then the program prompts you to input a
filename
** in the dopus output window.
** (c) 1992 by Merrill Callaway
*/

```

#### OPTIONS RESULTS

```

PARSE ARG filepath filename

```

```

/*
** Running from a shell, then if no arg is supplied, we need
** to ask for the filename.
*/

```

```

IF filepath="" THEN DO
  SAY 'Enter path/filename.'
  PARSE PULL device:'filename'
  j=1
  DO WHILE filename=""
    PARSE VAR filename path.j '/' filename
    j=j+1
  END
  wholepath=""
  DO i=1 TO j-2
    wholepath=wholepath||path.i '/'
  END
  filepath=device:'wholepath'
  n=j-1
  filename=path.n
END

```

```

/*
** Running from Directory Opus if no filename is supplied
** we need to ask for one.
*/

```

```

IF filename="" THEN DO
  SAY 'Enter the filename.'
  PARSE PULL filename
END

```

```

/* End section on omitted args. */

```

```

CALL Locate_ImageMaster

```

```

/* Display the image? */
IF RESULT = 1 THEN CALL MAKEIMAGE filepath filename
ELSE EXIT 20

```

```

Locate_ImageMaster:

```

```

IF ~SHOW('P','IM_Port') THEN DO
/*
** NOTE!
** Make sure to change the following to YOUR path
** and the program name of the Imagemaster you use!
** This version is meant to run Imagemaster Firecracker
** version on an A-3000 with '030 accelerator, hence the
** "fcf" suffix. Refer to your Imagemaster manual to see
** the name of the program you're running!
*/
  ADDRESS COMMAND "RUN Work:Imagemaster/imfcf"
  ADDRESS COMMAND WAITFORPORT 'IM_Port'
  IF RC=0 THEN RETURN 1
  ELSE RETURN 0
END
ELSE RETURN 1

```

```

/* Here is where we save the image to the FC Board */
MAKEIMAGE: PROCEDURE
/* pass along the names of the path, file */
PARSE ARG filepath filename

```

```

ADDRESS 'IM_Port'
imtofront
imagepath filepath
load filename

```

```

/* remove the Amiga overlay in a two monitor set-up */
ADDRESS COMMAND aoff

```

```

/*
** NOTE
** If you quit ImageMaster, after the image displays,
** the image will disappear. To get it back, should you
** have exited IMaster, open a shell and put in the commands
** "aoff" followed by "bon" (without quotes) at the prompts.
** The image should come back on your monitor.
** This program was set up for those using two monitors and the
** overlay feature of the FC. If you use a different config, you
** may have to change the code slightly to get the desired
** combination of FC display w/ or w/o the Amiga Display, too.
*/

```

```

EXIT 0

```

## Listing Two

```

/* showiff24.rexx shows an iff-24 file in ADPro */
/* when you select it in Directory Opus */

```

```

/*
** The program with the Firecracker24 called "showiff24"
** doesn't work very well. If you use the overlay mode, and
** try to show a file, everything is OK until you send "aoff"
** to turn off the Amiga overlay. The picture snaps smaller
** than the screen, a most annoying bug! This program fixes
** all that, provided you have ADPro. It uses ADPro to
** display iff24 files on the FC; a much better solution. May
** be run from Directory Opus by setting the gadget as
** "executable" and then in the command line:
** RX sys:rexxc/showiff24.dopus (fu) Set: output window, run
** asynchronously, and no filename quote. This allows the
** selected IFF 24 file to become an Argument to the program.
** It is then displayed on the FC24 after ADPro is opened.
** May also be run from the shell with the file as argument,
** or the program will prompt you. If you run it from dopus
** w/o specifying (selecting) a file, then the program
** prompts you to input a filename in the dopus output
** window. (c) 1992 by Merrill Callaway
*/

```

#### OPTIONS RESULTS

```

PARSE ARG filename

```

```

/*
** Running from a shell, then if no arg is supplied, we need
** to ask for the filename.
*/

```

```

IF filename="" THEN DO
  SAY 'Enter path/filename'
  PARSE PULL filename
END

IF filename="" THEN DO
  ADDRESS 'dopus_rexx' 'TOPTXT Select a file first!'
  EXIT 5
END

```

```

CALL Locate_ADPro

```

```

/* Display the image? */
IF RESULT = 1 THEN CALL MAKEIMAGE filename
ELSE EXIT 20

```

```

Locate_ADPro:

```

```

IF ~SHOW('P','ADPro') THEN DO
/*
** NOTE! I have lots of RAM. Fix the MAXMEM=# to your RAM prefs
** (the maximum amt of RAM you want ADPro to use (in bytes)).
*/

```



```

ADDRESS COMMAND "RUN ADPRO:ADPRO BEHIND MAXMEM=14000000"
ADDRESS COMMAND WAITFORPORT 'ADPro'
IF RC=0 THEN RETURN 1
ELSE RETURN 0
END
ELSE RETURN 1

```

```

/* Here is where we save the image to the FC Board */
MAKEIMAGE: PROCEDURE
PARSE ARG filename /* pass along the name of the file */
ADDRESS 'ADPro'
ADPRO_TO_FRONT
LFORMAT IFF
LOAD filename
/* get the image file data */
OPERATOR "DEFINE_PXL_ASPECT"
/*
** Note the placeholder periods (. . . .)
** We only want the 5th and 6th parameter.
*/
PARSE VAR ADPRO_RESULT . . . . w h .

bw=w /* Board width? */

/* see if the pic width matches an FC board width */
/* and if not, put up a requester to find out */
BOARDWIDTH:
IF bw=384&bw=512&bw=768&bw=1024 THEN DO
/* if not, use 768 as a default board width */

/*
** you probably won't need to use other than 768 res; others
** are included just in case! CLICK OK if in doubt.
*/

GETNUMBER "W:384 512 768 1024" 768 384 1024
IF RC=0 THEN ADPRO_EXIT /* quit if we cancel */
bw=ADPRO_RESULT
SIGNAL BOARDWIDTH
END

SFORMAT FC24
/* NOTE FORMAT: "SET XXX RAW" must precede what you want to do */
SAVE XXX RAW BOARD ON CLEAR
"SAVE XXX RAW B_WIDTH" bw "SET_DWY" w "SET_DWY" h "SET_DOX 0",
" SET_DOY 0 SET_SOX 0 SET_SOY 0"
SAVE XXX RAW AMIGA OFF CENTER IMAGE

/* We don't close down ADPro in case we need to adjust something, so
** uncomment the following if you want to close adpro after
** displaying the file. /* COMMENT OUT */ the ADPro_TO_BACK if you
** don't want ADPro to go to the back after showing the picture.
*/

ADPro_TO_BACK

/* ADPRO_EXIT */

EXIT 0

```

## Listing Three

```

/* A.REXX checks addresses of programs running.*/
SAY SHOW ('P')
EXIT 0

```

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## —Amos continued from page 55

```

    If K>27 and K<32
        'cursor key pressed
        MOVEIT[K]
    Else
        If (K>64 and K<91) or (K>96 and K<128)
            'text entered into command line
            COMMAND[K]
        End If
    End If
End If
End If
Loop
End
Procedure ARROWS
'draw some arrows on the screen and save them into
'the sprite bank
Ink 5
For X=1 To 4
    Draw 1,8 To 12,8
    Draw 14-3*(X-1),8 To 10-3*(X-1),4
    Draw 14-3*(X-1),8 To 10-3*(X-1),12
    Get Bob X,0,0 To 15,15
    Cls 0
    Next X
For X=1 To 4
    Draw 8,2 To 8,12
    Draw 8,14-3*(X-1) To 4,10-3*(X-1)
    Draw 8,14-3*(X-1) To 12,10-3*(X-1)
    Get Bob 4+X,0,0 To 18,18
    Cls 0
    Next X
End Proc
Procedure MOUSEROUTINE
'you will insert your own mouse routine here
'for this example we will just print the mouse position
TS="Mouse Position: X="+Str$(X Screen(X Mouse))
TS=TS+" Y="+Str$(Y Screen(Y Mouse))
MESSAGE
End Proc
Procedure MOVEIT[X]
FACING=X-27
'1=right 2=left 3=up 4=down
CYCLE=1
Do
    'Check for another keypress
    K=Asc(Inkey$)
    'If same cursor key then stop movement
    If K=X
        TURN[FACING]
        Exit
    End If
    'If another cursor key then change direction
    If K>27 and K<32 Then X=K : FACING=X-27
    'If text entered then stop movement and open command
line
    If (K>64 and K<91) or (K>96 and K<123)
        TURN[FACING]
        COMMAND[K]
        Exit
    End If
    'Move the bob and cycle the bob image
    'Increment the movement
    If FACING>2
        DX=0 : DY=1+2*(FACING=3)
    Else
        DX=1+2*(FACING=2) : DY=0
    End If
    'Check if Bob Image needs to be flipped
    MIRROR=-$8000*(FACING=2)-$4000*(FACING=3)
    'Erase and redraw the bob
    Bob Clear
    Bob 1,X Bob(1)+DX,Y Bob(1)+DY,-
    4*(FACING>2)+MIRROR+CYCLE
    Bob Draw : Screen Swap : Wait Vbl

```

```

    Bob Clear
    Bob 1,X Bob(1)+DX,Y Bob(1)+DY,-
    4*(FACING>2)+MIRROR+CYCLE
    Bob Draw
    Add CYCLE,1,1 To 4
    'Check if Bob entered a screen zone
    Z=Zone(X Bob(1),Y Bob(1))
    If Z
        'Back Bob off
        Bob Clear
        Bob 1,X Bob(1)-DX,Y Bob(1)-DY,1-4*(FACING>2)+MIRROR
        Bob Draw : Screen Swap : Wait Vbl
        Bob Clear
        Bob 1,X Bob(1)-DX,Y Bob(1)-DY,1-4*(FACING>2)+MIRROR
        Bob Draw
        HITZONE[Z]
        Exit
    End If
    Wait 2
Loop
End Proc
Procedure TURN[X]
MIRROR=-$8000*(X=2)-$4000*(X=3)
Bob Clear : Bob 1,,,1-4*(X>2)+MIRROR : Bob Draw : Screen
Swap : Wait Vbl
Bob Clear : Bob 1,,,1-4*(X>2)+MIRROR : Bob Draw
End Proc
Procedure HITZONE[Z]
'Your procedures for special screen locations go here
'One possibility is to send a message to a dialog window
TS="This is a dialog window which has opened to indicate
that"
TS=TS+" your Bob image has come in contact with Screen
Zone "
TS=TS+Str$(Z)+" . Hit any key to continue."
MESSAGE
End Proc
Procedure COMMAND[K]
'Open up command line screen and window
Screen Open 1,320,12,2,Lowres : Palette $FFF,0
Screen Display 1,132,240,,
Wind Open 2,16,2,37,1
'Get command from keyboard
Put Key Chr$(K)
Line Input "":C$
'At this point you should include a parser to interpret
the
'command line. I'll leave that project for you.
Wind Close : Screen Close 1
TS="You typed '"+C$+"'" into the command window. Now
write"
TS=TS+" some routine to parse the command."
MESSAGE
End Proc
Procedure MESSAGE
'K=line counter LZ=maximum line length LL=actual line
length
TS=""+"TS+" " : K=0 : LZ=30
If Len(TS)<30 Then LZ=Len(TS) : If LZ mod 2 Then Inc LZ
While Len(TS)>1
    Inc K : SS=Left$(TS,30) : X=Instr(Flip$(SS)," ") : LL=30-X
    LS(K)=Left$(SS,LL) : TS=Mid$(TS,LL+1)
Wend
LH=K+1 : If LH mod 2 Then Inc LH
Wind Save : Wind Open 1,160-8*(LZ/2),32,LZ,LH : Curs Off
Paper 7 : Pen 4 : Clw
For I=1 To K : Print L$(I) : Next I
Screen Swap : Wait Vbl : Wait Key : Screen Swap : Wait Vbl :
Wind Close
End Proc

```

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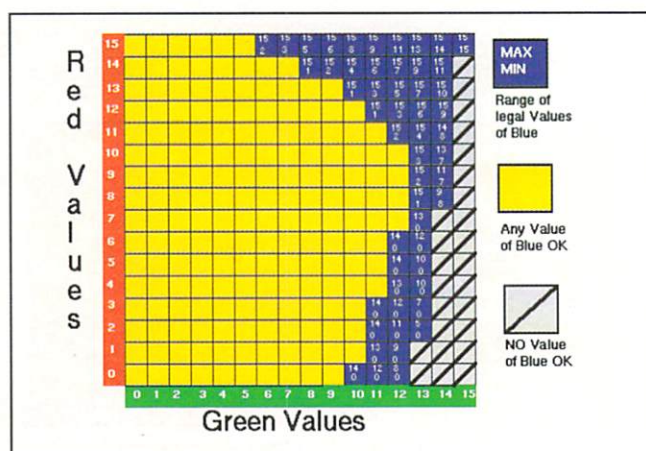
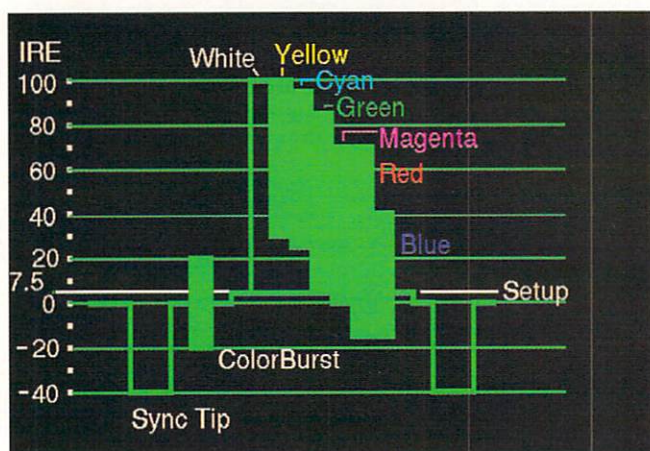
THE NTSC COLOR COMPOSITE VIDEO SIGNAL is probably one of the most misunderstood pieces of engineering you'll find. Often cursed for its shortcomings, it's actually an elegant design that even today makes astounding images, some 60 years after its introduction.

Black-and-white television served our purposes well until someone decided that color television might be more exciting—and profitable. With all the monochrome TV sets already sold, no one wanted to develop a new signal standard that would mean trashing all those sets. So our new color signal was derived from the old one. Many compromises were made resulting from the engineering state-of-the-art of the day (the 1930s) and the need to comply with existing FCC regulations for broadcasting TV signals. Since then, we have created video equipment and graphics systems undreamt of by the original designers. Our pictures are often created from scratch rather than being camera images of nature, and therein lie several

problems. Nature rarely creates fully saturated colors or images with sharp edges such as our computers can now make.

### Open Up! It's the Video Police!

Although your computer's RGB translates well into composite video, it can create FCC illegal colors. One of the compromises the NTSC (National Television Standards Committee) made was to limit the saturation of the individual R, G, and B signals to values less than 100 percent. As mentioned above, it would rarely be needed. The reason for this was that turning up the saturation too high creates a signal that exceeds 100 IRE units, a voltage measure of the signal. Figure 1 shows how the yellow section of a color bar signal just makes it up to 100 IRE units. This yellow is made from green and red, both at 75 percent saturation. Add any more of either the green or red and you're exceeding 100 IRE.





Exceeding 100 IRE units is acceptable if the image is feeding a monitor directly. It is a problem if you record or broadcast the signal. Recorders will either reduce the signal or else distort the recording. Broadcasting the signal will cause the RF signal to disrupt—known as “punching holes in the carrier”—and exceed FCC specifications. This was good for a “ticket” from the government and hence the term “illegal” colors. Figuring out what color combinations are illegal is a bit tricky so I found a chart to use—special thanks to Magni Systems, Inc. If you know the red and green values of your color, then you can simply read the chart to find the “legal” blue values. Notice that there are not only maximum values but also minimum values as well. In nearly all cases there is enough range for you to get pretty close to the color you need. This chart also works for 24-bit images. Just multiply all the values by 16 to get the equivalent 24-bit values.

### Putting Your Video Up on a Pedestal

Ever heard of the Set or Pedestal value for your video signal? If you’ll glance at Figure 1 again, you’ll see that your video is represented by an electrical signal that varies from 0 volt to .714 volt. This range is divided into 100 units often called IRE units. Any signal plunging below 0 volt is considered synchronization

manufacturers decided to produce equipment that would work directly with the Y/C signals. The advantage to this is that when working in Y/C, you reduce the number of times you combine and tear apart the signals, making for less noise and better preservation of that enhanced resolution. However, you will still have a high resolution picture—which is what attracted you to that format to start with, right? The trick is in making sure that the equipment that you intend to pass your signal through has a bandwidth meeting or exceeding the specs of your playback. The most obvious example is the Video Toaster by NewTek. Although it hasn’t any Y/C signal capability, it *does* have a bandwidth of 5.5 MHz, better than your S-VHS or Hi-8 unit produces. Your image is safe with the Toaster. You should also make sure any TBCs you buy are also as good as your decks. A great number of TBCs are rated at only 4.2 MHz, which will slightly reduce the sharpness of your first generation tapes.

### Y/C vs. Composite for Designing Graphics

But what about those NTSC artifacts you get with NTSC composite video? That is a problem with NTSC and not with Y/C. But tell me, how are you going to get your tape viewed by the intended audience without at some point being forced to record it or play it back as a composite signal? Cable systems, the networks, and

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## Black and white television served our purposes well until someone decided that color television might be more exciting—and profitable.

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information and not video. Back in the early days of TV it was difficult to ensure that the screen would be totally blanked during the retrace intervals, so the Setup or Pedestal level was added as a fudge factor. Video Black is defined therefore as 7.5 IRE units, not 0. The problem is that many genlocks and computer video boards don’t use the 7.5 IRE Setup level. This really isn’t a mess until you record a black screen from your computer—typically defining black at 0 IRE units—and edit to that a black signal from your camera or SEG (at 7.5 IRE units). You’ll definitely see a very disconcerting change in brightness between the two. If your genlock has “setup” as an option, use it! If it doesn’t, then make sure that the blacks in your image are set at values of 1,1,1 for the RGB. It’s not perfect, but it’s closer than it would be otherwise.

### Composite Video vs. Y/C

The introduction of S-VHS began a lot of confusion over the importance of Y/C and its advantages over the standard composite video signal.

First and foremost, let’s not forget why S-VHS and eventually Hi-8 made such a splash. It was the enhanced horizontal resolution of the recording format. It wasn’t the Y/C output. True, that was nice, but it was nothing new, having been already implemented on U-Matic recorders for years. However, this time numerous

approximately two million home VCRs use NTSC video, not Y/C. Design your graphics and video knowing that it had better look good in NTSC, and try not to get lured into complacency while looking at the Y/C output of your equipment.

Don’t trust the image unless it’s on a composite monitor. Y/C lies and RGB lies even more so. The NTSC colors won’t be quite the same hue or intensity, and the detail won’t be quite as sharp. In fact, the graphics may not even be in the same place. How do you know where the center of the screen is? Use Preferences to set your computer monitor to match a trusted composite monitor. I’ve seen a lot of surprised artists when they found that their images were askew.

•AC•

Please Write to:  
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c/o Amazing Computing  
P.O. Box 2140  
Fall River, MA 02722-2140



```

lock = LockIBase(0);
/* check location of window */
if(IntuitionBase->ActiveWindow->LeftEdge != 0 ||
   IntuitionBase->ActiveWindow->TopEdge != 0) /*
end of if statement */
MoveWindow(IntuitionBase->ActiveWindow, /* move
it to upper left */
(0 - IntuitionBase->ActiveWindow->LeftEdge),
(0 - IntuitionBase->ActiveWindow->TopEdge));
/* check size of window */
if(((IntuitionBase->ActiveScreen->Width == IntuitionBase-
>ActiveWindow->Width &&
   IntuitionBase->ActiveScreen->Height ==
IntuitionBase->ActiveWindow->Height))
/* end of if statement */
{
SizeWindow(IntuitionBase->ActiveWindow, /* small
*/
IntuitionBase->ActiveWindow->MinWidth -
IntuitionBase->ActiveWindow->Width,
IntuitionBase->ActiveWindow->MinHeight -
IntuitionBase->ActiveWindow->Height);
WindowToFront(IntuitionBase->ActiveWindow);
} /* end of make small */
else
{
/* make it full size */
SizeWindow(IntuitionBase->ActiveWindow, /* large
*/
IntuitionBase->ActiveScreen->Width -
IntuitionBase->ActiveWindow->Width,
IntuitionBase->ActiveScreen->Height -
IntuitionBase->ActiveWindow->Height);
WindowToFront(IntuitionBase->ActiveWindow);
} /* end of else make large */
UnlockIBase(lock); /* give it back to the system */
CloseLibrary((struct Library *)IntuitionBase); /* clean up
*/
} /* end of main */

```

## Listing ws.lnk

```

FROM LIB:cres.o+"ws.o"
TO "ws"
LIB LIB:lc.lib LIB:amiga.lib
SMALLCODE
SMALLDATA
NODEBUG

```

## Listing lmkfile

```

WS: WS.O
      blink from lib:cres.o+ws.o to WS lib
lib:lc.lib,lib:amiga.libND
WS.O: WS.O
      lc -cirs -ms -b -tr -O -v ws

```

•AC•

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1x4/80 Static ZIP (A3000).....	\$20.95
2.04 ROM A500/2000 (chip only).....	\$29.95
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# MultiKick: Building your own multiple Kickstart device

By Daryl P. Marietta

## An Overview

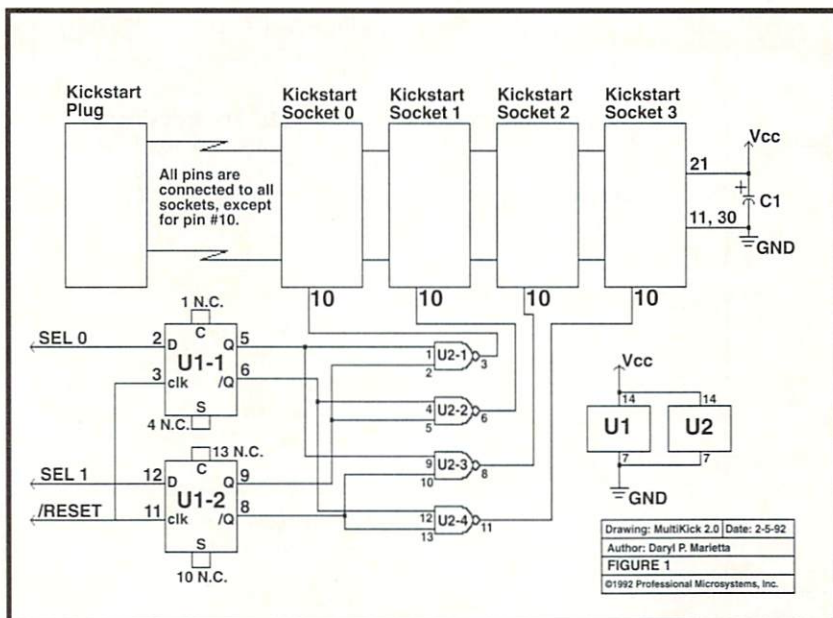
After installing your new AmigaDOS 2.0 upgrade, and seeing all the new and wonderful features it has, you thought you would never have to resort to running a previous version of Kickstart again. The fact is, however, that some software does not work under 2.0, and some developers have yet to release updates for their software. While the incompatibilities are very few, there are a couple. Maybe it's an old game that has since been discontinued, or another program for which support isn't readily available. The easiest solution would be to run the older version of the operating system with which the program is compatible. But since AmigaDOS 2.0 requires a new Kickstart ROM to be installed in your machine, swapping a ROM in and out just to run a few applications, is not very practical. The best solution would be a way to easily select a different ROM without having to open the machine. The easiest thing to do would be to wire up a switch to enable or disable a ROM. However, the idea of drilling holes and installing toggle switches isn't exactly appealing to most people and on an Amiga 500, there is hardly room to put a switch. A machine as elegant as the Amiga deserves a method that is not so crude-looking. The best solution would be a way to select a new ROM, using the mouse or keyboard. The simple circuit in this article allows you to do just that, and gives you flexibility in determining how you can select the alternate ROM. This circuit not only allows you to select between your old Kickstart ROM and your new 2.0 ROM, but up to four versions of Kickstart! You could leave out the extra two sockets if you wish to select only between two versions of Kickstart. No additional software is required to drive the board.

## What's Required

You will need only a handful of parts to complete this project. See Listing 1 for details. The column marked DGK #, is the part number of a comparable part from DigiKey Corporation. Comparable parts may also be available from JDR Microdevices and your local Radio Shack. My version of the board uses a short, 3.5-inch cable to connect the board to the Kickstart socket on the Amiga's motherboard. Using this technique will allow use of the MultiKick board in conjunction with RAM or accelerator boards that plug into the A500 or the A2000 CPU socket. If this is not necessary in your system, you could forego the ribbon cable assembly, and just use an extension socket of some sort, to plug directly into the Amiga's Kickstart socket.

## How It Works

Figure 1 is the schematic of the circuit. You can see that the circuit is very simple. The simplicity of this circuit is possible because we take advantage of the fact that the Kickstart ROM has two "enable" inputs. As the motherboard for the A500 and A2000 is designed, the Kickstart ROM is enabled by use of the output enable (\*OE) line. The actual chip enable (\*CE) is permanently wired to ground. We will utilize this line to select which Kickstart ROM is active. If you look at the schematic, you will see that all the Kickstart ROMs are wired together in parallel, with the exception of pin 10, which is the \*CE line. Three connections to the motherboard, by means of some microclips, are used to control the operation of the MultiKick board. The \*RESET line is connected to one of the microclips to control the "loading" of the configuration into the flip-flops in U1. This allows the MultiKick board to read the data on the other two microclips into the flip-flops on a system reset. This will allow the system to always default to a specific Kickstart ROM on every reset, unless you specifically tell the system otherwise. The other two microclips are typically connected to one of the CIA chips to control the selection of the alternate Kickstart ROM. The chip U2 is connected as a one-of-four decoder. This takes the outputs from the flip-flops, and enables only one of the Kickstart ROMs. Using the default connections for the SEL0 and SEL1 microclips, the default socket will always be socket 0. In the A500, it is possible to hook them to pins on the keyboard interface chip and then use a key or two on the keyboard to select the alternate Kickstart.



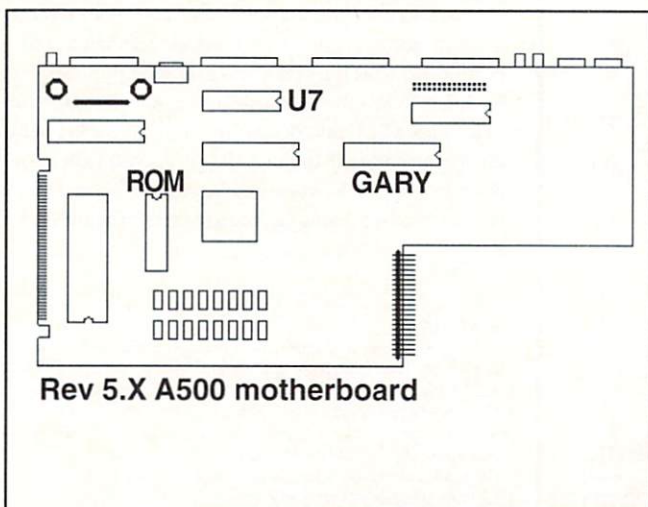
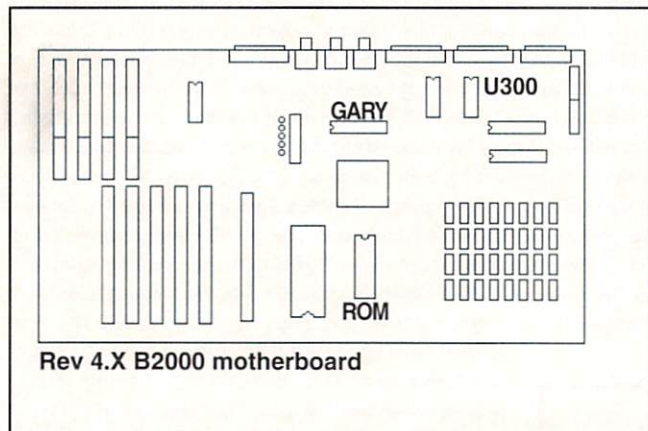
## WARNING:

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## Let's Build It

Now we are ready to start putting the board together. You'll see that you will be wiring all the sockets together on the perf board. If you install all the 40-pin sockets side by side, this will make the connections very easy. Connect all the same pins together, except for pin 10. Pin 10 is the CHIP SELECT for the ROM—it is just wired to ground on the A500 and A2000. Commodore uses pin 12, OUTPUT ENABLE, as their CHIP SELECT. Now you will want to assemble the ribbon cable assembly to prepare for the next step. Crimp the 40-pin DIP IDC connector onto the ribbon cable. Orient yourself with the internal layout of your machine, so you can be sure you have enough ribbon cable to place the board in a convenient place, without using too much cable. Keep this cable as short as possible, as too long a cable could make the machine behave erratically. Connect the 40-pin IDC header socket to the cable. Install the header connector onto your perf board. You have to pay attention to how you wire this to the Kickstart sockets. If you wired the ribbon cable assembly so that it is straight through, the pin layout of the header should be the same as the Kickstart sockets. Check it with a multimeter to be sure, as an improperly wired cable could cause damage to the board and your machine. Connect all pins on the header to all the corresponding pins on the sockets except for pin 10. Pin 10 on the header does not need to be connected to anything. Install and wire the two ICs as shown in the schematic in Figure 1 and wire them into the circuit as shown. The lines marked SEL0, SEL1, and /RESET are connected to the microclips via 6-7 inches of hook-up wire. Finally, connect the capacitor to the ground and power connection on the board. Install it as close as possible to the two small ICs. Now that the board is assembled, install it in your machine. Remove the Kickstart



ROM and insert the 40-pin DIP connector into its place. Install the ROM you want as the default into socket 0. Install any optional ROMs into the other sockets. Connect the microclip on the /RESET line to pin 5 on the GARY chip. Connect the microclips on the SEL0 and SEL1 lines to pins 8 and 9 of the 8520 CIA at U7 in the A500 or U300 in the A2000.

This configuration will allow you to select the ROM with the left mouse button, and/or the fire button on the joystick in the second mouse port. Now when you power up, the system should come up as normal with the default Kickstart ROM. If when resetting, or powering up, you hold down the left mouse button, you will get the Kickstart ROM in socket #1. If you hold down the fire button, you will get the ROM in socket #2. If you hold down both the left button and the fire button, you will get the ROM in socket #3.

Unfortunately, you cannot use the right or middle mouse buttons for SEL1, because during a system reset, those lines become outputs from the Paula chip, until the CPU can reconfigure the chip when the machine starts to run. You could make it possible to do this yourself, by cutting a trace going to mouse port 0, and installing a diode and pull-up resistor, and connecting SEL1 to the mouse port directly. But we'll leave that as an exercise for more experienced readers. Now you can easily select alternate versions of Kickstart and run some of your old software. I hope you find this project to be of good use. I want to encourage more people to get interested in building their own hardware modifications to their Amigas.

•AC•

## Listing 1

Quantity	Description	DGK#
4	40-Pin DIP sockets (wire wrap)	C8140
1	40-Pin DIP IDC connector	CDP40G-ND
2	14-Pin DIP sockets (wire wrap)	C8114
3	Microclip test leads	
1	4.7 uF Electrolytic capacitor	P6247
1	7474 TTL IC (Dual D Flip-Flop)	DM7474N
1	7400 TTL IC (Quad 2-Input NAND gate)	DM7400N
1	40-Pin wire wrap header	929836-02-36-ND
1	40-Pin IDC header socket	CSC40G-ND
	Some hook-up wire	
	A wire wrap perf board	
	A couple of inches of 40-conductor ribbon cable	
	Some double-sided tape (to mount board to something)	

DigiKey Corporation  
701 Brooks Ave. South  
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Thief River Falls, MN 56701  
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San Jose, CA 95124  
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Daryl P. Marietta  
c/o Amazing Computing  
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Fall River, MA 02722-2140

## Editor's Note,

Recently, multiple kickstart boards have become available from commercial vendors such as ICD of Rockford, Illinois, Unitech Electronics Pty. Ltd., and others. For a complete list, please see the next issue of AC's GUIDE to the Commodore Amiga.

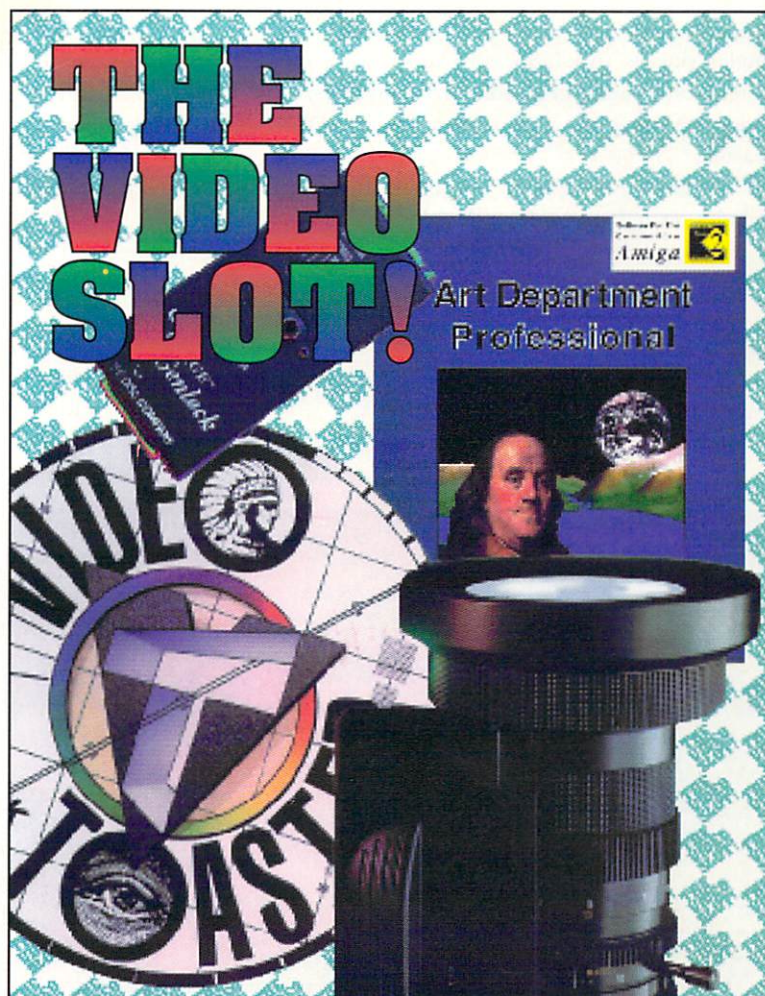


**H**ere's the bottom line: CDTV could be the most useful device an Amiga video producer could have. Hard to believe?

Granted it is no Video Toaster, but it could improve your productions dramatically. CDTV is Commodore's version of a CD-driven Amiga 500 that is not only greatly expandable, but also functions more as a living room multimedia system than a traditional computer. If you are involved in video, you already have an Amiga 500/2000/3000. Why purchase an additional computer in the form of CDTV? There are several reasons, but the most obvious is that every major computer platform is investing in the future of CD-ROM. Increasingly complex programs, massive data collections, hi-color images, and other software production variables make floppy disk distribution costly, time-consuming, and limiting. An obvious example would be the Video Toaster software, which I expect will be available in a CD version in the next update.

Having a CD drive opens up a world of possibilities to access large amounts of data. The first step would be to hook up your CDTV to your current Amiga computer. The most popular way to do that is via a public domain program called *ParNet* (on Fred Fish Disk #400). *ParNet* requires a special DB25 cable which connects the CDTV unit to an Amiga via the parallel port. The *ParNet* software on your Amiga mounts CDTV as a device. You can read it just like a 600MB hard drive.

So what software is available in CD form? Plenty. ISO-9660 is a CD format used by IBM and Commodore when pressing disks. This allows you to access IBM CDs running on your CDTV directly from the Amiga Workbench. IBM programs will not run, but any disk that contains data such as pictures, music, or text can easily be read with a file program such as *Directory Opus* or a graphics program that supports IBM images formats such as *ImageMaster* or *Art Department Professional*. One of the major needs of a video producer is for background images, textures, and graphics screens, and there are hundreds of collections on CD for very reasonable costs. One of the better companies is called Aris Entertainment (310) 821-0234. Aris currently produces four CDs of images: Batik Designs (fabric designs), Vintage Aloha (Hawaiian shirt designs), Wild Places (natural landscapes), and World-View (planet and space images). Lately I've made extensive use of the Wild Places CD for background screens in production. There are 100 images available in several hi-res/hi-color formats on the same disk: 24-bit TIFF, 8-bit PCX, and 8-bit BMP. The images are all breathtaking. There are scenes of beaches, seashores, clouds, forests,



## **This month:**

- **Video and CD-ROM—Using CDTV as a Video Peripheral**
- **What Do CDs Have to Offer?**
- **Create a 24-bit Image Using CDs—Literally**

**by Frank McMahon**



jungles, sunsets, rock formations, deserts, streams, and much more. With a palette of 16 million or 256 colors, these images are perfect for numerous hi-color boards such as DCTV or the Video Toaster.

By the way, the graphic that accompanies this article includes several images from the Wild Places CD. I rendered the image using *Imagine 2.0* and texture-mapped the pics (the floor is also a Wild Places image). The CD object is a Video Toaster framegrab texture-mapped onto a disk primitive (to cut the hole I used a cylinder and *Imagine's* "slice" command). To put the logo on the Toaster CD image, I used *Light 24* painting software and a Firecracker board.

result is access to any type of CD using an Amiga. By the way, there are several excellent software dealers that deal specifically in CDs. One of the largest is EduCorp (800) 843-9497. Call and ask for a free copy of their CD catalog for either IBM and/or Macintosh. IBM format is the safest bet if the CD is available in IBM or Mac, since it would be ISO-9660 compatible. EduCorp, and most dealers in general, offer many more Macintosh CDs than IBM pressings.

It's no secret that Amiga developers are stepping up CD development. Software image collection producers such as Texture City are now putting their graphics on CD. Texture City now has a CDTV version of their popular texture set. Using



3-D image rendered using images from the "Wild Places" CD.

What about Macintosh CDs? As long as IBM CDs follow the ISO-9660 standard (almost all do), they work great on a CDTV unit. However, Apple has an entirely different file format. Until recently, you couldn't access Macintosh CDs on a CDTV. Newly released file systems now make this possible. The one I have been using lately is *AsimCDFS*, from Asimware Innovations. This package is a CD file system which reads HighSierra and Macintosh HFS, as well as ISO-9660 CDs. There are other file systems available and more to follow; the end

Texture City and installing their 40-diskette version on my hard drive using *Quarterback* makes a CDTV version a welcome relief. Walnut Creek produces an Amiga CD which is full of public domain software taken from the Internet archives. But beware, as it does *not* work with CDTV. I have the disk and have talked with the distributors. Although it claims to follow the ISO-9660 format, it crashes immediately open loading on CDTV. Walnut Creek did not test it on a CDTV unit before pressing, and its boot structure is anything but CDTV standard. They promise a

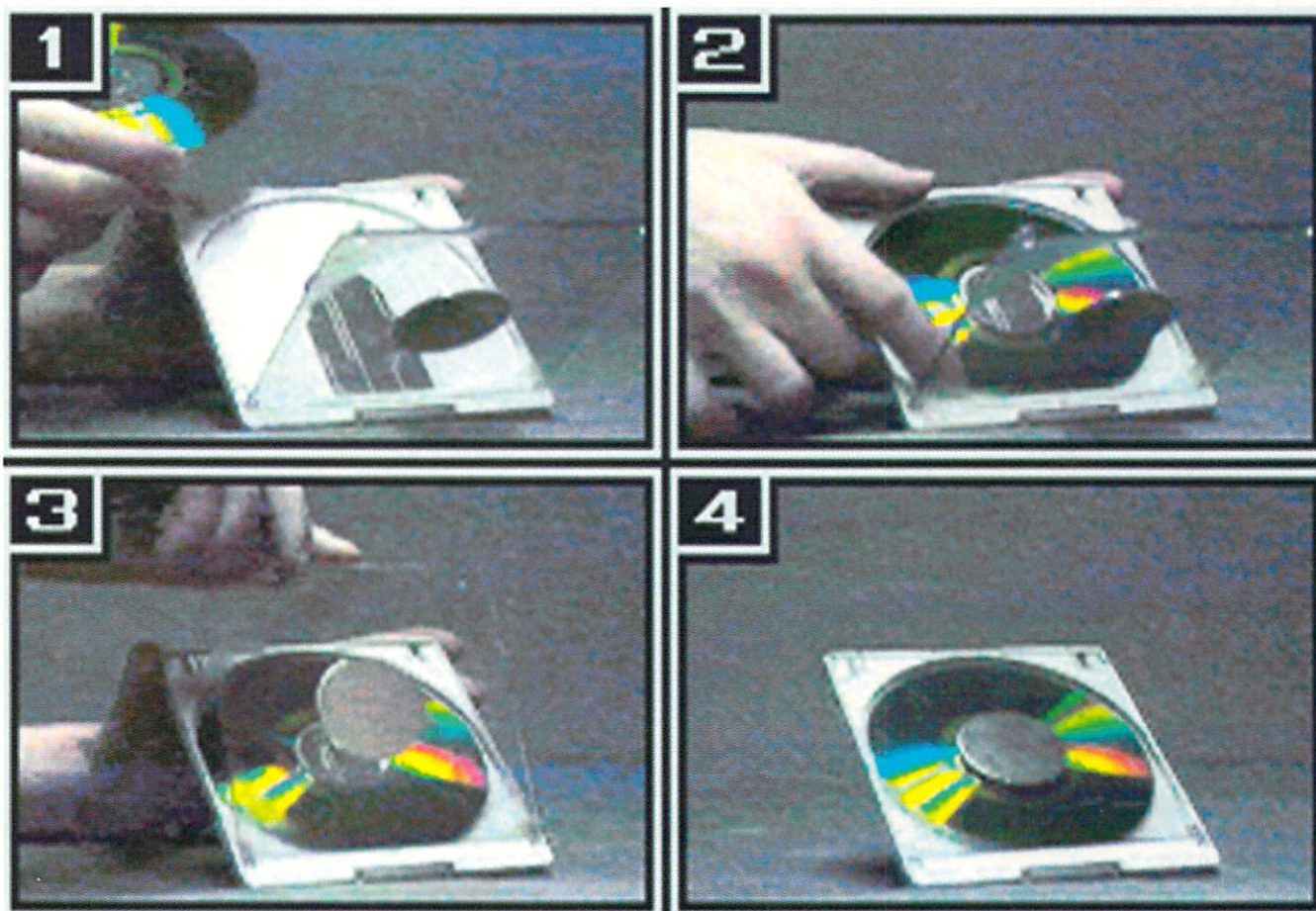


revised CD late this year which will be CDTV compatible and contain even more software. Several companies have versions of the entire public domain Fred Fish libraries on CD. The earlier-mentioned AsimCDFS file system comes with a Fred Fish CD included at no extra charge for an excellent buy. However, I prefer the set-up and the update method of HyperMedia's *Fred Fish Collection on CD-ROM*. The Fred Fish disks contain hundreds of files and programs useful to the video director.

Fred Fish Multimedia? You bet. On the Fish CD you'll find clip art, ray tracing programs, image display programs, animation creation tools, MIDI, music players/creators, fonts, display hacks, color palette software, scrolling text display

upgrade path because new Fred Fish disks come out monthly. If you buy a CD, you should be able to get an upgrade CD with the new Fred Fish releases at least quarterly. *Aquarium* comes on some of the Fred Fish CDs. This excellent utility lets you scan the CD by text string or by category. For example, you could select "Graphic Utilities," and the program would scan the entire collection and highlight any programs that had to do with the chosen category. The Aquarium program was written by B. Lennart Olsson from Sweden. He deserves praise for creating an incredibly useful tool in navigating the Fred Fish CD collection.

One other great feature of the CDTV unit is that it's an Amiga! While your 2000 is rendering frames or processing an



CD caddy used to load disks into CDTV.

programs, and much more. Need to cue up over-the-shoulder graphics for a newscast? Check out *StillStore* on disk#454. Want to have a crawl over your video? Try *TitleGen* on disk #300. You'll be very surprised at how many programs and utilities on the Fred Fish CDs can be used to enhance your video productions. The price is very reasonable (under \$75 to \$100) when you consider the huge amount (600MB) of software you are receiving. Several CD developers produce versions of the entire Fred Fish collection. When choosing one, make sure there is an

animation, you can multitask by using your CDTV as an off-line Amiga. Most video-related programs will run just fine on a CDTV. The CDTV unit has only 1MB standard—all of which is thankfully chip RAM—so you may want to upgrade in addition to adding a keyboard and disk drive. A floppy disk drive is essential for any type of CDTV set-up. First, it lets you run most Amiga programs such as *DeluxePaint IV*. More importantly, it allows you to boot off a Workbench disk rather than the CD drive. This is essential, because if you boot off a CD, such as a



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Fred Fish disk, the CDTV unit will not normally allow swapping of several CDs in one session. Ejecting a CD triggers a system reboot. This is a safety feature designed to refresh the memory when running different CDTV software. Another advantage to adding a drive is that you can incorporate a Macintosh/IBM file system in your floppy disk drive boot-up so you can load other CD formats. Your boot disk can also be configured using your start-up sequence to save memory, launch programs, or generally tailor-make your CD set-up. The Commodore Professional upgrade (mouse, keyboard, and disk drive) allows use of the CDTV off-line as an Amiga. If you hook up the CDTV via ParNet, then the Commodore package can be avoided because you won't really need it. You can do everything from your 500/200/3000 screen. However, I would still recommend adding a floppy disk drive. I am currently using RocTec's black external disk drive for CDTV and have had excellent results and no problems.

Genlocks and other video devices should work fine on CDTV as well. Genlocking your CDTV (running a DeluxePaint animated title) over your Amiga output (animated background) could have limitless possibilities. Maybe run your CDTV into your Video Toaster and fly in some animated DeluxePaint creations? I say maybe only because I have yet to try this. It should be noted that the CDTV unit outputs rock-steady, full-color composite output (not to mention Super-VHS and RF output as well), which should open up a variety of uses. There is

also a CDTV genlock available as well as a DCTV resolution hi-color display board in the works for more variables in the future. Did I mention sound? CDTV has MIDI in and out for musicians. The real fun comes from several CDTV programs which let you alter and program your CD music, which many of us use in almost all video productions. I have been using a program from Microdeal called *CD Remix* which gives unlimited control over creating remixes, looping, and even adding digitized speech.

This is beyond simple programming. CDTV software is rapidly expanding to allow total creative freedom over producing CD soundtracks for whatever production you have in mind.

Why hook up a CDTV with ParNet instead of just getting an internal CD drive for your Amiga 2000? Well, honestly, a dedicated CD drive would be cheaper, but not really by that much. CDTV software is expanding, and while CD drives for the Amiga aspire to be CDTV-compatible, they traditionally come up short. A CDTV unit is the only 100-percent CDTV-compatible unit out there. Internal CD units won't be able to provide the additional graphic capabilities in store for CDTV as well as specific CDTV features such as the full-motion video CD-XL format used by several CDTV programs. Another point is that CDTV is a lot of fun! When you're not using it for video production, there is a wealth of fine software to choose from. I have about 20 titles and am constantly amazed by the depth and wealth of information that can be gained by 600MB programs! Before this starts to sound like a Commodore press release, CDTV is far from setting the world on fire. Sales are slow, but software and hardware development is slowly building exactly as the Amiga 1000 did during its early stages years ago. Amiga 1000 users knew what they had back then as CDTV owners do now—tomorrow's technology. CDTV's visual-based organization fits right into video production work. With a wealth of CD software from every major computer platform and numerous hardware options available, a CDTV unit may give you more bang for your buck than your current Amiga. It is one option that any video producer should investigate.

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# R O O M E R S

by The Bandito

*[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]*

## The New Amiga

The Bandito has talked some about the capabilities of the new Amigas that will soon be available. Of course, many of the details have been fuzzy, because of the tight security wraps around Commodore development—and to some extent because the final decisions on hardware configuration and pricing are left until the very end of the development cycle. Still, as we get closer to the release date, more information is leaking out, and the Bandito is right there mopping up the data.

Commodore has admitted publicly that they will be releasing new Amiga models this year, and that they are putting more effort into R&D, particularly into CDTV and CD-ROM development.

The Big C finally copped to the existence of the new AA chip set, which was premiered to developers at the last DevCon. As the Bandito has told you, the AA chips support a variety of new graphics modes, including 640x480 with 256 colors out of a 16.7 million color palette. Also shown was SuperHAM mode, which can display up to 262,000 colors from that 16 million color palette; essentially, this is the same as true 24-bit color, given that the monitor has only about that many pixels anyway. Maximum resolution is up to 1280 x 1024.

There's also support for animation in these new graphics modes; dual playfields in

any resolution, and a number of improvements to sprites. You'll even be able to mix resolution modes with sprites and background screens. Animation should be quite fast in the 640 mode, even with all the extra colors. Of course, when you get to higher resolutions, the animation will slow way down. Still, it's far faster than any other machine in the same price range.

Prices? Well, Commodore will wait till the last minute to finalize those. Based on past performance, you can expect that Commodore will probably price themselves lower than "comparable" Macintosh models, but not by much. Though that's a moving target now, since Apple has been slashing prices regularly the last year. This is a good habit that Commodore should pick up. Makes more sense than lowering prices temporarily, then raising them back up again after a few months.

## The Meaning of Amiga

What's this? You feel the familiar Amiga hardware is shifting beneath your feet? You'd better believe it—and it's about time, too. The Amiga is now moving into the future, regaining its leading role in graphics and animation. But hardware changes don't mean that the Amiga is now too different to be called an Amiga. The soul of the Amiga is its operating system, anyway; this is the source of the familiar Amiga look and feel we all know and love. The beauty of the Amiga's tightly coded multitasking operating system can only be fully appreciated after you've spent some time trying to use Windows. Take the Bandito challenge: Go into a computer store and sit down in front of a Windows machine. See how long it takes to redraw the screen when you resize or move a window. Check out the way files are stored. Then compare this to an Amiga, even one running on a 68000. It is to laugh.

The Macintosh? Better than Windows, certainly, but it still doesn't multitask properly, nor does it have animation power, and the operating system software gobbles space like the federal budget eats tax dollars.

So don't worry that Amiga hardware is changing; more powerful hardware is always better. As long as we can keep the essential qualities of AmigaDOS, we have an Amiga.

So what do these new Amigas mean to the future of the Amiga? Essentially, the AA chipset means the emergence of a new set of standard Amiga graphics. Developers are already busy adapting to these standards. First to adapt, of course, will be graphics programs. By next summer, there should be several paint programs that take advantage of the new graphic resolutions, as well as popular 3-D software and of course *Art Department Professional*, the indispensable part of any graphic artist's toolkit. Video applications will also be taking advantage of the new modes; video titling and presentation packages will look great with more colors and higher resolution, as well as faster animation and better sound.

What won't change much? Word processing, for one thing. How many colors do you really need in your document, anyway? Disk utilities, spreadsheets, telecomm software—they'll all look better in higher resolution, but other than that there are no big changes in store. But desktop publishing will be improved; it'll be nice to see two-page displays on the Amiga, so you can really work on magazines and such.

Then there are games. With the power available in the new chipset, the Amiga can once again run rings around any other computer when it comes to entertainment. But don't expect a lot of games to take advantage of the new graphics and sound capabilities of the Amiga; game developers notoriously lag behind when it comes to



adopting new hardware. A few adventure-some types will go first, and those few games will probably sell quite well. We may also see more IBM games ported directly over, since the new graphics modes easily handle VGA resolutions. But until there are a lot of the new Amigas in the hands of consumers, don't expect to see games for the new mode crowding your shelves.

Commodore will probably market the A500 or A600 as a low priced home machine in the U.S.A. CDTV, with some enhancements, will be kept around as a "multimedia delivery system." The rest of the new Amiga line will be targeted at the professional user in video, presentation, training and multimedia.

In the future, as the Bandito noted before, Commodore is looking at RISC chips to keep up with the race for greater CPU power. The Big C has recently been negotiating with DEC, with an eye towards using their 64-bit Alpha chip as the basis for a new line of Amigas. Of course, AmigaDOS would have to be ported over, but they're not expecting to see any hardware on the market before 1994.

## The Amiga Is Dead, Long Live The Amiga

It's been a wild time lately, hanging out on the digital grapevine. In the absence of information from Commodore, rumors having been growing like crazy. Dealers shrug when asked about new Amigas, since Commodore releases no information to them. It's information starvation as far as official channels go. Even the trusty unofficial sources—like the Bandito—are experiencing a problem with collecting data.

Commodore is having so much difficulty making up its corporate mind that the story keeps changing. Here's what the Bandito knows for sure: new Amigas with more powerful graphics are on the way, but Commodore is still dithering about things like release dates, pricing, and feature sets. Also for sure: Commodore has been taking entirely the wrong approach in discussing these new products by not discussing them at all. As a result, customers and dealers are getting nervous about investing in Amigas right now. Do the current machines have a future? Will there be an official upgrade path to new features? Is Commodore abandoning the U.S. market? These are the questions popping up all over the Amiga community.

Case in point: the CD-ROM drive for the A500. Commodore swore up and down

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officially, though Commodore's been touting it for over a year. And no price reduction to \$500, as promised by Commodore repeatedly to developers.

This information vacuum grew so compelling that it even starting sucking in journalists. Amiga fans were shocked to learn that longtime Amiga writer (and Amiga fan) Matthew Leeds has dropped his Amiga column in a general-interest computer magazine. His final column essentially claimed that there was no more market for the Amiga, so he didn't have an audience for his column any more. Curious, sez the Bandito; if there's no Amiga market, who wrote all those angry letters to him after that column?

Next up came a column by syndicated computer columnist Phillip Robinson, who mourned the death of the Amiga in an article carried nationwide by many newspapers. He suggested that the only reason to buy an Amiga these days was as a power supply for the Video Toaster. This article, not surprisingly, got many Amiga fans riled up. What is surprising, to the Bandito, is that Commodore also took notice and reacted.

Commodore has generally ignored the press in the past, occasionally deigning to issue a press release or perhaps trot out a product to be reviewed. Oh, some Commodore PR flack might write a letter if the Amiga got panned somewhere, but it's usually been left up to the loyal Amiga fans to defend their beloved machine. And without much response from Commodore, people began to wonder if they even cared what happened in the U.S. market any more.

This time, though, Commodore is reacting quite energetically. Commodore has

they'd ship it last year, then they said this summer, now the release date is again tentative, as is the pricing. Oh, and along the way they changed the name (it's now the A570), confusing everybody. So where is it? If the A500 is being discontinued in Europe, then will they ship the A570 in Europe? And if they don't ship it there, will they ship it in the U.S.A.?

Another example is CDTV. The marketing strategy has already shifted twice, and seems to be shifting again. (Today's strategy: CDTV is a low-cost multimedia delivery method. Huh?) While there's now an appreciable line-up of titles, new title development seems to be slowing to a crawl. Why? No hardware sales. No statement from Commodore as to the future of the machine. No DCTV graphics capability announced

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sent a rebuttal out to the media and to their dealer network, refuting the article point-by-point. More significantly, Commodore has asked that Amiga dealers and Amiga fans write to their newspapers and to Mr. Robinson to respond to his column (no flames, please; that hurts more than it helps). At the same time, Commodore has arranged for an interview with Mr. Robinson to present their side of the story, and he has agreed to write a new column based on that interview.

Among the many points in Commodore's rebuttal were several interesting ones. Commodore stated that there would be significant product announcements at the World of Commodore show in Pasadena, which may represent a change from their previous plans. Also, Commodore claimed 1000 dealers in the U.S., which is more than many people thought they had these days. And Commodore announced that they recently signed a strategic product reseller agreement with Digital Equipment Corporation, though they neglected to say what that actually entailed. Will Commodore sell DEC workstations or PC's? Will DEC sell Amigas? The Bandito would like to know what that's all about.

Also, Commodore is updating industry trade editors and reporters about the company's U.S. business strategy in their key professional markets. And Commodore has added new senior management to the consumer side of the business, planning a variety of product announcements and new consumer applications during the next 12 months.

Commodore is planning press events at both World of Commodore and Fall Comdex. In the meantime, they've started a telephone contact campaign to talk with hundreds of editors, reporters, and freelancers who write about Commodore and the Amiga. Apparently, Big C has decided to increase the flow of information to the media, which is certainly a good thing. Especially if it can prevent more of these "dead Amiga" articles.

So the upshot of all this flap is that Commodore has finally 'fessed up to its new Amigas, and is planning to be much more aggressive in dealing with the press. Both of which are positive results. And the Bandito hears that Commodore is planning an extensive print advertising campaign this fall in a number of magazines aimed at profes-

lower prices permanent. For example, the Amiga 2000 with 1084S color monitor, which was \$1986, is now \$1539 (a 23% reduction). Yes, it's still expensive, but it is closer to reality. There'll probably be another price reduction by the time you read this article.

Another configuration aimed at the video professional is an Amiga 2000 with a 100MB hard drive, A2630 accelerator card, 5MB of RAM and a 1084S monitor for \$2699. For \$500 more, Commodore will throw in an A3070 150MB tape drive. And for a while, the A3000 25/50 with 2MB of RAM and the new 20MHz Bridgeboard thrown in is listing \$3399, and an Amiga 3000T with a 200MB hard drive, 5MB of RAM and a 1950 or 1960 VGA color monitor is \$4499. These prices are supposed to expire soon, but they may well be extended if sales are good.

### New CDTV Stuff

So you'd like to add a CD-ROM drive to your Amiga 500, but of course the A570 isn't around yet? Or how about your A2000 or A3000, which is not compatible with the A570? Well, a company called Asimware Innovations has begun shipping AsimCDFS, a CD-ROM File System that will allow you to hook up a CD-ROM drive to your Amiga. AsimCDFS supports the three largest CD-ROM file formats: ISO 9660, High Sierra and Macintosh HFS, as well as most CDTV discs. Of course, some CDTV discs may rely on the special CDTV ROMs for their operation, and those discs might not work. But better some discs work than no discs work, sez the Bandito. Oh, and Asimware throws in AsimTunes, an intuition-based CD Audio controller, and FishMarket, a CD-ROM filled with the public domain Fred Fish disks (from 1 to 637).

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sional markets, spreading the news about the power of the new Amigas. Sounds like Commodore is on the right track once more, and moving in the right direction.

### Cheaper Amigas

So with all of these new Amiga models coming soon, what's to be done with the current inventory? Move 'em out, of course. Commodore announced on June 1st that it has slashed retail prices on some Amigas by up to 25%. In addition, the company introduced several new system configurations and the new A2386SX Bridgeboard.

Really, what also occurred is that Commodore ran some "promotional" pricing in March, because their price hikes in January had stopped sales stone dead. Noticing how things picked up when prices dropped, Commodore decided to make

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A number of CD-ROM drives are supported; of course, you have to have a SCSI controller handy to plug in your CD-ROM drive, but any SCSI controller conforming to Commodore's SCSI Host standard should work. They've tested it with many popular brands of CD-ROM drives, including the NEC CDR series, various Toshiba drives, and the Panasonic CD-501. AsimCDFS costs \$79.00; contact Asimware Innovations, 101 Country Club Drive, Hamilton, Ontario L8K 5W4 or call (416) 578-4916 if you want to know more.

### PP&S Destroyed By Fire

The Bandito has some sad news to report about one of the key developers of Amiga products. On June 1st, Progressive Peripherals & Software was struck by tragedy; their building was gutted by a fire, which also destroyed several other neighboring businesses. Steve Spring, proprietor of PP&S, said he couldn't put a dollar value on his loss, but it was significant. He vowed that PP&S will "rebuild from the ashes." The Bandito hopes that the Amiga community will rally around to help PP&S by continuing to buy their products as they put their business back together. We need every Amiga developer we have, and especially people like PP&S who create cutting-edge technology for the Amiga. Let's hope that the rebuilding goes smoothly and that PP&S returns to full operation as swiftly as possible.

### The BridgeBoard Gets Extended

Commodore has finally released their new, more powerful BridgeBoard, just in time to watch the bottom fall out of PC Clone

pricing. Perhaps the 20 MHz Bridgeboard 386SX priced at \$959 would have been a great deal a year ago. But nowadays for that amount of money you can get an entire 33 MHz 386DX system with 1 MB RAM, SVGA graphics, 1024 x 768 monitor and 60 megabyte hard drive. OK, you have to put another computer on your desk somewhere. But then again, someone else can use it while you're using your Amiga. Once again, Commodore is well behind the price/performance curve with the BridgeBoard; that's been the case ever since the first model. What should they do about it? Lower the price to about \$500. Look, even \$600 would make it a reasonable alternative. But to really run today's PC software, you have to add a VGA card and monitor to the BridgeBoard, which will run you at least



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There's some other solutions from third-party developers. A company called ATOP is offering a number of different Bridgeboard Enhancers, for owners of previous 286 BridgeBoards. (You may be able find those BridgeBoards at fire sale prices, or even bundled in with A2000 systems.) The Bridgeboard Enhancer is a direct plug-in replacement for the 80286 processor in the Amiga A2286 AT Bridgeboard (though it doesn't work in the A8088 Bridgeboard). The Enhancer replaces the 8MHz 80286 processor with a 20MHz 80386SX processor, a proprietary controller chip, and a zero-wait-state RAM cache. Basically, you yank the 286 chip and plug in this replacement module, and you've got a tremendous speed-up. Of course, it does list for \$449, but if you already have a 286

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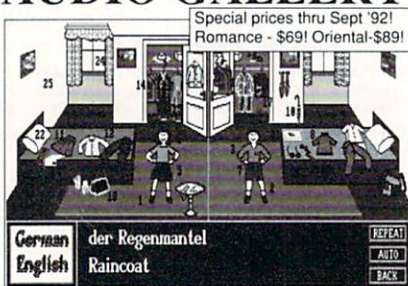
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John Kubo completes his animation for the Amiga Art Corner video project.

(SIGKids is continued from page 96)

The 11th student was a surprise. Mael Gerard (9th grade) spoke only French, and was visiting the event from his home in South Africa. According to Mr. Kass, "The SIGKids, recognizing his illustration skills, asked Mael, using SIGKids Chair, Coco Conn, as a translator, to illustrate specific subjects to be animated."

This was just a small segment of the students who had been recruited from the greater Chicago area. While the Amiga Art Corner SIGKids were producing a video, students with other interests were working on other computers and participating in a variety of seminars, lectures, and product demonstrations. The Amiga SIGKids were one of only two groups with the goal of a completed project to achieve.

Some of the other fascinating exhibits included an interactive rock (created with the Macintosh) and a room of animated Legos. The Lego exhibit used several different computers including the trusty Amiga.

The SIGKids concept was under the control of SIGKids' Chair, Coco Conn. Ms. Conn used a variety of smiles, laughter, and a strong voice to do everything from announcing demonstrations in other areas of the SIGKids center to giving away t-shirts and buttons.

Aside from working with the latest hardware and software available, the SIGKids were exposed to the larger world of computer graphics. A number of notable industry leaders provided presentations on different platforms and aspects of computer graphics. Todd Rundgren of Utopia Software, known for his extensive use of NewTek Video Toaster effects in his music videos, provided a presentation on digital video production.

Was it all worthwhile for the students? At the end of the video created by the Amiga Art Corner SIGKids, the credits roll over a live shot of the SIGKids talking with Ms. Conn. As she asks the students if they would like to come back next year, they answer her with a unanimous yes.

•AC•

# SIGGRAPH '92

## Thousands see the latest in computer-generated graphics

SIGGRAPH '92 once again presented the best of current computer graphic talents and techniques, as well as suggested the future of this rapidly growing art form. Discussions ranged from film and television breakthroughs to fine art applications. Corporations as well as individual artists demonstrated their abilities that ranged from interactive art to full virtual reality.

### SIGGRAPH Features

The SIGGRAPH Art Show contained some of the most amazing 2-D and 3-D art seen today. The exhibition not only contained finished pieces, but was alive with artists who were demonstrating techniques and creating pieces during the exhibition.

SIGKids (please see *And furthermore...* on page 96 of this issue) provided an educational segment to SIGGRAPH. Students were selected throughout Chicago to listen to guest speakers, take part in projects, and create with the best software and hardware available. The Amiga was thoroughly represented in this arena with a special section called The Amiga Art Corner.

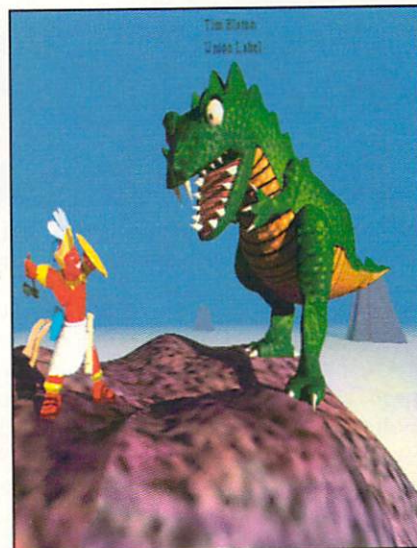
### Other Computer Platforms

While both IBM and Apple Computer were exhibiting, Silicon Graphics captured center stage with an enormous booth filled with IRIS workstations. Silicon Graphics introduced *RealityEngine* graphics for the IRIS Crimson™ workstations and IRIS Power Series™ supercomputing systems. *RealityEngine* graphics allows users to create and manipulate complex graphics for use in simulations, videos, and virtual reality presentations.

SIGGRAPH attendees waited in several long lines to participate in a variety of virtual reality demonstrations presented by Silicon Graphics. From a submarine that explored the ocean floor to a flying scooter which traveled quickly through a forest, people were allowed to explore computerized realities.

### Amiga Vendors

NewTek did not exhibit on the show floor, but held a private screening on Wednesday evening at the Palmer House Hilton, away from the exhibition site. Along with the *Video Toaster*, NewTek displayed Todd Rundgren's latest video product from Utopia



Juan vs. Godzilla using PLAYMATION

Software. VideoMedia also used the Amiga with NewTek's Video Toaster to demonstrate the new video effects available with Toaster 2.0.

Programs Plus and Video of Chatham, Ontario, Canada were promoting both Activa International's *Real 3D* and the *Fusion-Forty* accelerator board from RCS Management, Inc. *Real 3D* is a solid modeling, ray tracing, and animation tool which allows real-time positioning of wire frame objects. With object surface mapping, real materials, animation creating and editing, and a user-friendly interface, *Real 3D* offers an exciting Amiga graphics application.

The Vivid Group presented the *Mandala Virtual Reality System*. This interactive system allows users to be placed directly in the action occurring on the screen. Two Amigas were in use. One demonstrated the *Mandala* authoring system, while the other allowed



Silicon Graphics offered virtual reality in a wide variety of Amusement "rides."





**Tea Time Rebellion**, an animation created with Will Vinton's **PLAYMATION**, to be released for the Amiga September, 1992.

attendees to participate in a Mandala reality. Participants walked through computer-generated corridors to choose one of four sections—sports games, video games, music instruments, or art programs. In the sections, the participants were allowed to choose one of six different activities. The audience participation display was a great way for the attendees to see the Amiga handling computer-generated realities. Mandala is now in use by a diverse list of customers including the Smithsonian and Nickelodeon.

Anjon & Associates announced Will Vinton's **PLAYMATION** for Microsoft Windows and the IBM 386/486 with the Amiga version to be ready by September 1992. **PLAYMATION**, subtitled "The Three Dimensional Motion Picture Studio," uses techniques similar to Claymation®. Claymation is the clay animation method created by Will Vinton Studios and made famous in their creation of the California Raisins™.

According to information supplied by Anjon & Associates, **PLAYMATION** offers a new approach to 3-D graphics based on spline patches. With **PLAYMATION**, as the user sculpts and moves objects, the objects automatically bend and stretch to simplify the creation of lifelike animation. They state the package will assist in creating organic 3-D characters to utilize lip-synch techniques.

Will Vinton's **PLAYMATION** is promised to supply rich and colorful animation with all the necessary elements of reflections, shadows, and textures. Created originally for the animators at Will Vinton's studios, **PLAYMATION** was designed to produce animated real characters that can move and talk. The software provides the capability of directing animation figures to show flexibility and emotion.

"Joyride" is an animated film created with **PLAYMATION**. The short film and its futuristic stars provide a quick look at the possibilities of this software. The animation is flawless and quickly forgotten as you watch the characters. **PLAYMATION** may have provided the tools required to produce spectacular animated films and presentations. We anxiously await the final release of this product on the Amiga to provide a full review.

Will Vinton's **PLAYMATION**  
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FAX 818 998 7925  
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## HOT TIPS

### Ultima VI (by Origin)

The same cheats used in the MS-DOS version of Ultima VI are applicable to the Amiga version. Holding down the ALT key then pressing 2, then 1, then 3 will give a very handy aerial view of the area in which you are. This is a great aid when mapping out mazes.

Another great tip is to say "Spam" three times to the character Lolo, followed by "Humbug." This allows access to a secret menu which allows you to change the attributes of your characters. Change the health, hit points, as well as add useful items to the character's inventory. This is a great way to renew the health of your characters after a battle. You can also change some of the game's status flags. However, it is not recommended that you do this if you are playing with the original game diskettes. Make backups first and use them instead.

Here are some more useful items to add to your inventory:

Item Number	Item
18	Magic Helmet
8	Magic Shield
23	Magic Armor
28	Swamp Boots
48	Glass Sword
63	Lock Picks
79	Lightning Wand
89	Gold Nugget
80	Fire Wand

(Courtesy of Hank Hodgins, Lawrenceville, GA)

### Gods (by Konami)

Here are some level codes which you can try. Each level starts you off with \$80,000, which you can spend in the shop at the beginning of each level.

level 2	CEL
level 3	UMI
level 4	OVO

(Courtesy of Ara Arzoumari, Toronto, Ontario, Canada)

### Populous II (by Bullfrog/Electronic Arts)

Type in the following password and you will be able to start the game with full power: ADKIUCMCZNDIFINL

Type it in during the "Choose your deity" screen.

(Courtesy of Daisuko Elmundo, Brighton, MA)

## Congratulations

Hank is the winner of *Global Effect*, the game shown in last issue's column. Congratulations, Hank!

To enter, send in your HOT TIPS on your Amiga games to:

HOT TIPS  
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## Win a free game!



This month's prize:

### Accolade's Elvira II: Jaws of Cerberus

Winner's name will be published next issue.



# DIVERSIONS

## Black Crypt

by Miguel Mulet

You know you're dealing with an evil guy when even banishment to another dimension won't hold him. Such is the case for Estoroth Paingiver, an evil cleric imprisoned in another dimension due to the unspeakable acts he and his creatures had committed against the citizens of Astera. Somehow Estoroth is slowly gaining access to this dimension once again, and the only way to stop him is to retrieve four magical weapons, which can be found in his old lair. Naturally, the dungeon is not unprotected, but at the same time many useful items to aid in your quest can be found in the same halls. Will you dare enter Estoroth's *Black Crypt*?

A new *Dungeons & Dragons* game from Electronic Arts, *Black Crypt* (\$49.95) once again puts a party of four people into imminent danger, all the while trying to protect humanity from the ravages of an evil necromancer. Each of the four adventurers comes from one of the Four Guilds of Astera: The Guild of Fighters, The Guild

of Clerics, The Guild of Magicians, and the Guild of Druids. Each of the Guilds has its own spells, and thus each party member has special abilities which help the group as a whole. Each individual also has qualities which can be varied at the start of each game. These attributes include strength, wisdom, dexterity, and intelligence.

Once you have chosen faces, abilities, and names for everyone in your party, you are ready to face the dangers that await in the dungeon below. Maneuvering your party through the *Black Crypt* is easy, using the mouse-driven interface. To move the party, just click on one of the six directional arrows at the right of the screen. Your view is shown in the large window at the left. The status of the entire party is shown by the gauges at the bottom of the screen. These indicators are rather simple; to bring up more detailed information on the character, one presses the right mouse button over the appropriate character's status box. This brings up a screen from which you can check the character's inventory (including his armor, clothing, and weapons status), or how the individual's attribute status is coming along.



Be brave and explore the dungeons in *Black Crypt*. The game was developed by Raven Software and is distributed in the U.S. by Electronic Arts.

Fighting is just as easy, and is often necessary, throughout the dungeon. Just click with the left mouse button over the character's face at the bottom of the screen, and this activates his or her weapon. Picking up items along the way is as easy as clicking on the object in the viewing window, and dragging the object to any of the character's hands or inventory screens.

The dungeon graphics are smooth and fairly well done, although the animation of the aggressors found in the tunnels is not spectacular. Gameplay moves along at a quick pace, accompanied by a limited number of sound effects, which are quite well done, such as the sounds of doors closing behind you, or minions of Estoroth approaching before you. The manual is well written, and the three-disk game can be installed on a hard drive without difficulty. There is no copy protec-

tion, at least not in the review version. Other nice features include a pause control, and the ability to find your coordinates via the fighter character. Although this feature doesn't completely eliminate the pen and paper you'll need to map your way throughout the crypt, it certainly is helpful.

All in all, *Black Crypt* is a good interpretation of a dungeon and dragons type game. If you've played this kind of game before, it really isn't very different. If, however, you are an aficionado of this genre of game, it certainly gives plenty of new territory to explore. Thus, if you're an experienced adventurer who needs a few new rooms to explore, or simply a novice who'd like to try a little D & D, try venturing forth into the *Black Crypt*.

**The Black Crypt**

Arriving at the site of the Black War, you discover that you are not the first to venture into the Tomb of the Four Heroes. The once-sealed entrance to the dungeon has been forced, and among the many bones and relics left behind in the Black War are the remains of dozens of unfortunate adventurers; their weapons and their journals may help you survive the perils of the

**BLACK CRYPT....**

**PROTECTOR**

**FORCEHAMMER**

**VORTEX**

**SOULFREEZER**

*Black Crypt* can act as an introduction to Dungeons and Dragons-style games.



## Wild Wheels

by Miguel Mulet

The 21st century will no doubt bring many new wonders to the world, including the preservation of our spaceship Earth. To accomplish this, however, it seems our progeny have almost completely given up fossil-fuel-burning vehicles. Instead, they tool around the motorways in electric and solar cars. The only problem with this is that it is, yawn, *boring*! Thus, the 21st century sport of *Wild Wheels* (\$49.95) was established. Any qualified driver can relive the pleasure of driving a powerful gasoline engine by signing up to play on a Wild Wheel team. The game is simple: a high tech version of soccer, in which you try to push a ball into a goal. The "wild" part is that you're doing it in cars, and just as important as scoring goals is demolishing the vehicles of the opposing force.

Starting is simple: just register your name, and you're given 1000 credits with which to assemble your first Wild Wheels team. A team is made up of five cars, each with an assigned role: blocker, guard, killer, or fetcher. You always assume the role of the strike vehicle, the fifth classification of player, but you can have any combination of other players you choose. While you can choose the starting positions of all the vehicles, the computer controls the other vehicles on your team. At first, you'll start off in the smallest class of car, but as you accumulate your winnings, you'll be able to move up into other divisions.

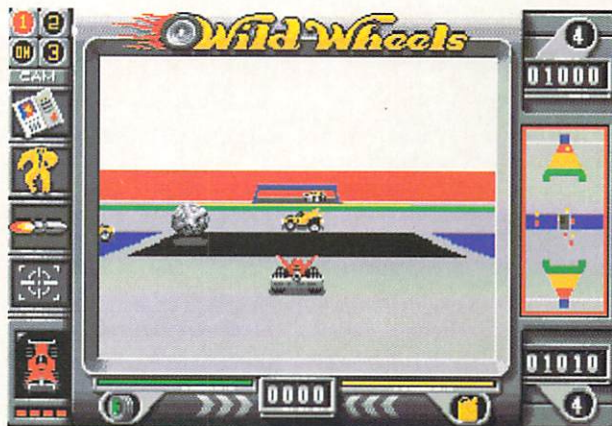
With your team assembled, you're ready to move into the arena, which features a "magnosurfaced" 200-meter by 120-meter playing field. There is a goal at each end of the field, and points are scored for each ball that is pushed into the goal. The closer you are to the goal, the more points you'll receive. That's because it's harder to stop your vehicle closer to the goal, and if your car ventures forth into the goal, it explodes! And speaking of explosions, you can still win a round without scoring a single goal by running into each vehicle on the opposing team, thus destroying it. Points are also scored just by keeping the ball on your opponent's side of the arena.

As if that weren't already enough action, there are other goals to which your team should be geared. Periodically, a tile will appear on the playing field which enhances your vehicles—better tires, more speed, more fuel, acceleration suits, full licenses, and weapons, to name a few. Some enhancements can be used only at higher levels, so the player must decide whether to keep them for use later, or sell them at a profit. All tiles which appear on the field must be collected by the strike vehicle.

Provided on a single disk, the game can be easily copied onto a hard drive. Copy protection is accomplished via the keyword look-up method. The 40-page manual goes over all the essential details of gameplay, but the best way to learn is to pick up the joystick and play.



## DIVERSIONS

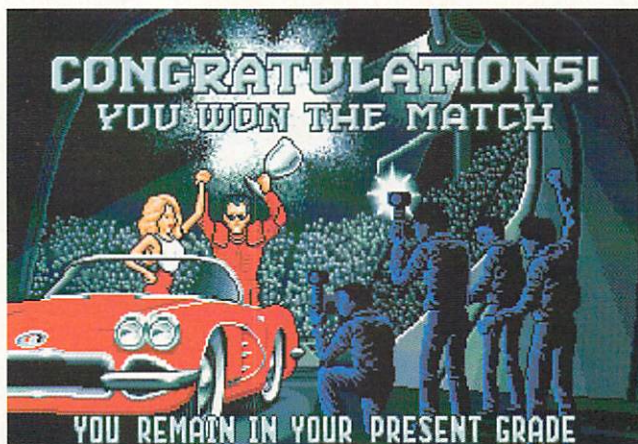


The playing screen is divided into three major portions. The leftmost portion of the screen reveals the attributes that the player has collected, while the center portion of the screen is devoted to a view of the playing field. There are three available views, plus one overhead view of the field. The right portion of the screen reveals the scores of both teams, along with a radar display of the playing area.

Graphics and sound effects are mediocre, but gameplay is more important in Wild Wheels. As driver of the strike vehicle, the player assumes control of most of the game. As team captain, however, the player must decide what types of vehicles to place on the field, and what positions they should occupy. At first, action is more important than strategy, but

as the game progresses, the player will find that the types of vehicles and their positions become very important. Each new class of vehicle, both as friend or foe, involves the player in learning the intricacies of the car type. The amount of variation is what makes Wild Wheels replayable.

Overall, Wild Wheels is a fair action game for the Amiga. Enough elements of strategy are involved to make the game more than a demolition derby, yet enough action is retained to make the game enjoyable. Learning to control each vehicle doesn't take too long, so that most players will progress through each class at a satisfactory rate. If the freeways are getting on your nerves, why not jump into one of these Wild Wheels rather than getting a ticket in a real one?



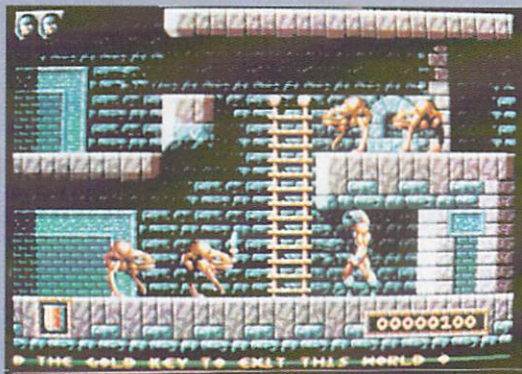


## Gods

by Miguel Mulet

Greek mythology is full of interesting stories, mainly because the so-called gods possessed so many "human" qualities. They were jealous of one another, enjoyed exercising their power over lowly human beings, and, in general, seemed to create more trouble than good. It was because of this attitude that the gods made mankind a most generous offer: rid their great temple of the evil monsters that have taken possession of the citadel of the gods. The human who did so would be granted one "favor" from the brethren of Mount Olympus. Little did they know that one human was brave enough to accept their challenge, and his one wish was to join them as an equal, thus making him immortal. The gods are counting on not having to grant that wish, but you, as Hercules, can prove them wrong. Will you challenge the Gods?

*Gods* (\$39.95) is a surprisingly good action-adventure game from Konami. In it, you assume the role of Hercules, trying to retake the Citadel of the gods which has been overrun by all sorts of nasty creatures. Armed with just your raw courage and brute strength, you must also use a little gray matter if you're to overcome all the dangers awaiting you.



Left: Hercules defends himself against one of many strange foes.

Above: The hero of Gods, Hercules.

Hercules must traverse four levels, each of which is subdivided into at least three smaller "worlds." The first level is the city, which leads to the temple of the gods. Below the temple lies the labyrinth, and under that the underworld. If you defeat the master guardian of each level, you become immortal.

Gameplay is rather straightforward, using solely the joystick to maneuver the main character. Jumping is accomplished by moving the joystick up and to the left or right, while ducking or stooping to pick up objects is performed by



pulling the joystick down. Objects found along the way increase your wealth, health, and strength. Weapons can be purchased in stores found along the way, or enhanced simply by finding accessories scattered throughout each world. Strength is improved by eating food and special potions.

Obstacles are either those which you just blow away using your weapons, or are puzzles which must be thought about carefully in order to achieve an objective. A classic puzzle in this game is to position a series of levers appropriately before a lethal trap will give way. Other puzzles must

be solved in order to reach a necessary key, or other item. Thus, *Gods* transcends the boundaries of a normal action game and tries to add some strategy to gameplay. Luckily for the gameplayer, the gamble pays off and makes *Gods* an interesting and entertaining adventure.

The graphics are well done throughout, featuring smooth horizontal and vertical scrolling playing fields. The characters, monsters, and objects are almost all animated, and sound effects accompany the retrieval of items as well as the devastation of your

foes, with a scream or two if you lose your own life. The three lives provided seem barely enough, but the longer you play, the further you get. The custom soundtrack

played during the introduction is well written and is beautifully synchronized with the intro's changing graphics.

Provided on two copy-protected diskettes, the game also utilizes a code sheet from which a four-digit code must be entered at the start of the game. Games in progress cannot be saved, but the player is given a password as he advances, which can be used to restart a game close to where the player left off. The game does implement a pause feature, and a restart feature as well.

Although there are several similar action-arcade games on the market today, *Gods* combines just enough action with puzzles to make the game both fun and challenging. So if you've ever thought you'd like to become immortal, why not try to join the Gods on Mount Olympus?

## Agony

by Jeff James

By now it's safe to say that most of the people on this planet have heard of Psygnosis' blockbuster computer game, *Lemmings*. While most other computer gamers may have already begun calling Psygnosis "those Lemmings people," we gamers in the Amiga market know better. Sure, *Lemmings* is a great game. But to Amiga gamers everywhere, Psygnosis was founded upon the eloquent game design principle first articulated in games like *Menace* and *Shadow of the Beast*—destroy everything that moves—twice.

Now with their latest release for the Amiga, *Agony* (\$49.95), Psygnosis has returned to its roots of frenetic arcade action. In *Agony*, you assume the feathered guise of a magic-flinging owl who must blast through six increasingly difficult levels of assorted monsters. True to the side-scrolling "shoot-em'-up" genre of arcade gaming, your owl is positioned at one side of the screen, while animated enemies stream from all areas of the screen, trying to block your path.

To clear out those enemies, you have plenty of firepower at your disposal. In addition to a forward-shooting magic blast, you can collect scrolls and potions along the way to aid you in your journey. Up to 10 special powers are available, ranging from complete invulnerability to a rotating shield of fireballs. All the action is controlled with a joystick, although the spacebar can be used to activate the spell selection menu if desired.

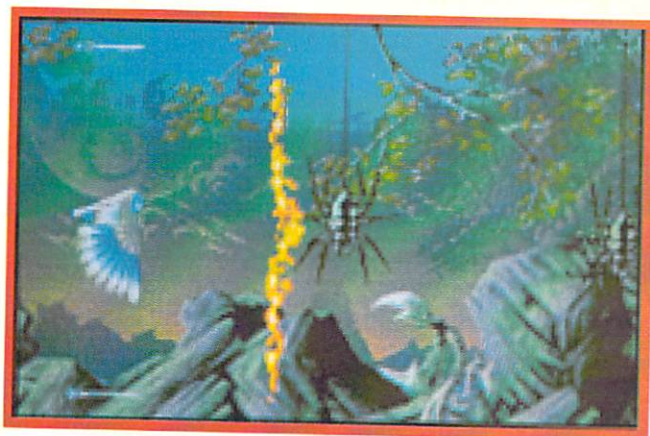
Graphics, sound, and animation are up to the usual Psygnosis standard of excellence. The animation of your on-screen alter ego—Alestes the Owl—is especially well-done. The size of both your owl and the enemies arrayed against you is rather large, pleasing to the eye but leading to a cramped playing area—there just isn't much room to maneuver. Sound effects are excellent, and the music which plays during the



introduction is very well done. Unfortunately, much of the music which plays during gameplay is quite short and repeats often, becoming more of an irritant than an enhancement to gameplay. Surprisingly, *Agony* is easier to play than most other Psygnosis titles, making it a good game for younger children who might become frustrated with such arduous arcade challenges as *Shadow of the Beast* or *Barbarian II*. Like most Psygnosis games, *Agony* does not support a hard drive: I keep harping on Psygnosis to offer hard drive support, although it appears my gripes are falling upon deaf ears. Requiring only 512K RAM and Kickstart 1.2 or higher, *Agony* did work fine on all the Amigas I had a chance to test it on, including an A3000.

In the final analysis, *Agony* doesn't break much new ground. Except for being the first game that features a fireball-spitting owl, *Agony* has a great deal in common with most of the other arcade-action games available for the Amiga. *Agony* isn't the best game that Psygnosis has ever released, nor is it the worst. Fans of Psygnosis' hard-edged style of arcade mayhem shouldn't mind that at all.

The player takes the role of Alestes the Owl in *Agony*, Psygnosis' latest shoot-em-up.

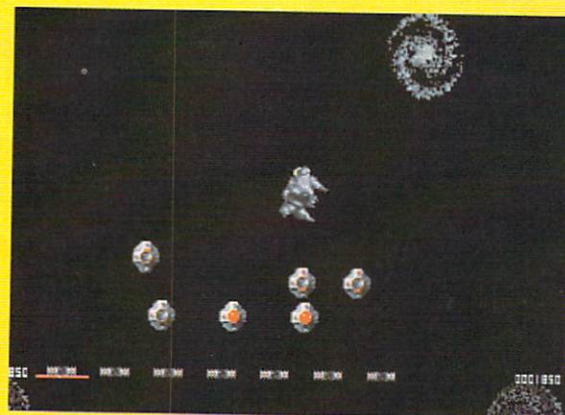


## Battlestorm

by Miguel Mulet

Why different species can't live in peace with each other in a universe as big as ours continues to be a mystery. Although you can probably name a few of the "baddies" in our galaxy, this time it seems that the evil Kalomarians are attacking the frontier worlds of our beloved mother Earth. In order to protect the human species, you must venture forth into Kalomarian space, and destroy their ultimate weapon—the *BattleStorm* (\$49.95).

In *BattleStorm*, you must destroy the weapons of destruction of the four civilizations which comprise the Kalomarian Consortium. In order to do this—believe it or not, it's your destiny to do so—you man your solitary fighter and head off into Kalomarian space. Each homeworld of the four civilizations is guarded by heavy ground forces, as well as large cruisers and motherships. Destroying these enemies allows your ship to gain extra shield energy, as well as extra armament if you can destroy the largest spacecraft. With luck, you'll defeat all four civilizations, and live in fame for the rest of your life.



Each level is comprised of two stages—the first is a multidirectional level in which your ship is bombarded by the previously mentioned foes. Defeating them leads you into battle against the *BattleStorm*, on a vertical scrolling playing field. Points are awarded for destroying enemy weapons, although during gameplay the actual accumulation of points is secondary to survival.

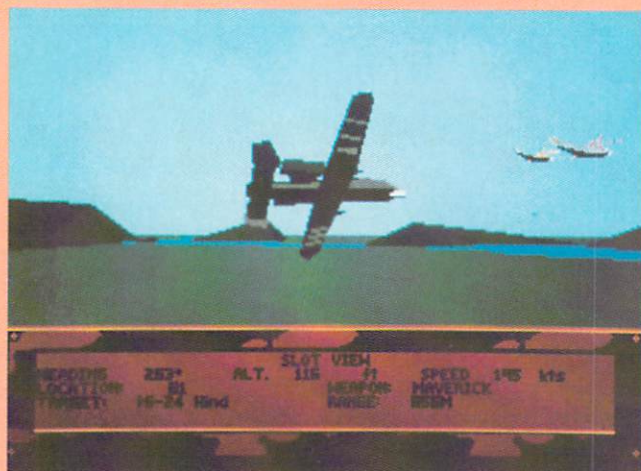
Gameplay is fast and furious, with excellent control of your ship in both of the two available control modes. The soundtrack and sound effects are well done, and the graphics are sharp and extremely smooth scrolling. There are four different skill levels available, one in which your ship is indestructible so that you, the player, can master the controls. The other three

levels improve speed, while sacrificing armor. The 16-page manual is quite succinct, covering game basics for each of the computer systems on which the game is available and briefly reviewing the potential adversaries. The one-disk game is copy-protected.

The plot of *BattleStorm* is nothing new; as a matter of fact, it's been reused many times. Best described as a space shoot 'em up, the game is technically well done, although there is not much strategy involved. If fast arcade games are your bag, then you may well be pleased with *BattleStorm*. Otherwise, try before you buy.







## A-10 Tank Killer v1.5

by Jeff James

In the first two months of 1991, the A-10 Thunderbolt II was among the many Allied planes which ranged through the smoke-filled skies over Kuwait, seeking out and destroying Iraqi ground forces. Equipped with an unbelievably rugged airframe and a tank-shredding 30mm cannon, the A-10—affectionately dubbed the “Warhog” by its pilots—was undoubtedly one of the most effective weapons employed in the Persian Gulf War.

Partly in response to the superlative performance of the A-10 in the Gulf War, Dynamix has released an update to the original A-10 Tank Killer for the Amiga. A-10 Tank Killer v1.5 (\$49.95) adds a considerable number of new features and improvements, including 64-color screen graphics, more missions, and an improved flight model.

One of the most noticeable new features is the revamped game interface, which now sports a coat of tan and brown camouflage (commensurate with desert warfare). New digitized images pro-

vide the backdrop for many pre- and post-mission actions, all rendered in the Amiga’s 64-color extra-halfbrite mode. While the original A-10 restricted gamers to combat in Central Europe, A-10 v1.5 offers three complete mission sets: the first two deal with missions against the Warsaw Pact over Central Europe, while the last offers seven Persian Gulf scenarios. Missions can be flown individually or as part of a cohesive campaign, where the goals of each mission are interconnected.

Although the revamped interface and additional missions are welcome, the improved flight model is possibly the most improved aspect of the game. Programmed with the assistance of code gurus Rhett Anderson and Randy Thompson, A-10 v1.5 features eight detailed settings, ranging from a spare, 16-color view for slower Amigas up to a 64-color flight mode with dithered fill shapes and light-source shading. A500 owners without hard drives or accelerator boards will find gameplay a little sluggish, although gamers with faster Amigas will be rewarded by smoother flight and faster control response. This new version features a number of other welcome amenities, including a polished hard drive

installation utility, support for analog joysticks, complete AmigaDOS2.04 compatibility and a fact-filled, 92-page instruction manual. A-10 Tank Killer v1.5 ships on three non-protected diskettes and will operate on any Amiga model equipped with at least 1MB of RAM, Kickstart 1.2 or higher, and either dual floppy drives or one floppy drive and a hard disk. Once installed on a hard disk, A-10 v1.5 occupies a little over 2MB of hard drive space.

Although A-10 v1.5 bristles with new features, a few rough edges remain. The digitized shot of a real A-10 instrument panel used in the game may look impressive, but only a scant few of the flight instruments actually work. A hand-drawn cockpit with working fuel gauge, altimeter, and other instruments would have been a welcome improvement. I also found that using a digital joystick was slightly cumbersome—trying to center the aircraft in flight without banking left or right took more effort than it should have. Hard-boiled flight simulator aficionados may also scoff at the fact that the plane never runs out of fuel, as Dynamix decided to keep things simple and not add the important aspect of fuel management to the game. Players can fly over the battlefield for hours, destroying targets at will until either they are shot down or all of their plane’s ordnance has been expended.

Obviously geared more towards weekend air warriors than dedicated joystick jockeys, A-10 v1.5 is, nevertheless, an enjoyable flight simulator of the best close-air support (CAS) aircraft in the world. One can only hope that Dynamix has the good sense to apply the considerable programming skills of Thompson and Anderson towards the forthcoming Amiga version of Dynamix’s popular simulation of World War II air combat, *Aces of the Pacific*.

## Police Quest 3

by John Steiner

“Your wife’s been viciously stabbed. You’re at the breaking point, bent on revenge. Can you keep your temper and follow professional police procedure? Can you keep cool while you direct forensic and crime lab investigations? Do you have the guts to make it as a cop in the gritty world of crime, corruption and gore?” This quotation from the box of *Police Quest 3: The Kindred* describes the scenario that you are to take part in when you play the game.

*Police Quest 3* (\$59.95) is, as you might have already guessed from the title, the third in a series of realistic police department simulations. The game is easy to get started, and the opening graphics and music sequence takes advantage of the Amiga to present a vivid, realistic image. Gameplay is standardized around Sierra’s adventure game interface that will be instantly familiar to you if you have played other titles in their product line. You should be able to learn the easy-to-master mouse driven interface very quickly, as it operates intuitively for those who have never played a Sierra game. The menu is located along the top of the screen, and is depicted as a row of icons instead of a standard Amiga pull-down menu. It’s invisible until you need it. There is no need to use the right mouse button to activate the menu either. Just bringing the mouse pointer into the menu area causes it to appear. As with most games in this genre, when you first start the game, you will see the opening scenario. If you click the mouse button on the Sierra logo screen, or at any time during the opening sequence, you will be given the opportunity to immediately begin playing the game.

The game features both digitized video images and hand-drawn digitized color scenes. There is a stereo music soundtrack, and a few sound effects are thrown in for good measure. The program comes on five Amiga floppy disks,



and requires a 1MB Amiga equipped with dual floppies or a hard disk. You need to use Kickstart 1.2 or better. The sticker that identifies the game version recommends a faster Amiga system.

The system I used for testing is an A3000/25 with 5MB RAM. The software installs easily to a hard disk with an install utility that you will find on the startup disk. You can specify a full install which takes over 4MB of hard disk space, or a small install which will put only one disk (a little over 800K) on your hard disk. When you run the program in this fashion, the game will ask you for the appropriate floppy disks as it needs them. If you are an occasional player, and can't afford the hard disk space the full install requires, you will find this mode to be acceptable. However, you can expect much longer wait times during disk access with this mode. I installed the game in both fashions on my hard disk and experimented with game play. If you have two floppy drives connected to your Amiga, the small installed version recognizes when you insert the correct disk in either drive, so you can have two of the four game play disks on-line at any time, a convenience when you are playing the game. As you might expect, you will probably prefer the full install on the hard disk during game play. I had no trouble doing either the full or partial installation, and if you don't have the directory you specified already made, the program will allow you to make it. The only thing you need to be

aware of when installing the program is how the install utility works when you specify the sub directory to install it in. The default directory the installer wants to make is Sierra, and if you choose that, it will put a directory called PQ3 inside the Sierra directory.

Since I don't have any other Sierra games installed on my hard drive, I changed the DH0:SIERRA to DH1:PQ3 to install the program on the partition with the most available space. I expected the program to make only a single directory called PQ3, and put the program in it. What happened was that the program placed the game in a directory called PQ3 inside the directory that I made, called PQ3. The correct way to handle this is to tell the program to install on DH1:. It will then create PQ3 in the root directory. Actually, I could have avoided this problem if I had read more carefully the messages that the install program provided me.

The game has light moments, and deadly serious moments. There is a warning on the box that the game contains adult themes, and parental guidance is suggested.

I spent many enjoyable hours in trying to solve the puzzles the game presents, and like most games of this type, there are plenty of puzzles to solve. Sierra provides hint books for all of their games, though I didn't take advantage of that. It is a good idea to read the accompanying literature thoroughly as it contains many hints and tips for maneuvering in the game. You can of course save the

game at any point you wish if you decide to quit, or if you are about to try something new that might be dangerous to your character, and don't want to have to replay the game to that point.

I won't describe any more about the game's scenario than the quotation from the box that I used to introduce this review. If you enjoy adventure/simulation games, you will probably find Police Quest 3 an interesting pastime. The program has given me many pleasant hours of gameplay, and it's one that you probably won't solve in a few minutes.

•AC•

## Product Information

**Police Quest 3: The Kindred**  
Sierra On-Line, Inc.  
P.O. Box 485  
Coarsegold, CA 93614  
(209) 683-4468  
Inquiry #240

**A-10 Tank Killer v1.5**  
Dynamix/Sierra On-Line  
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(209) 683-4468  
Inquiry #241

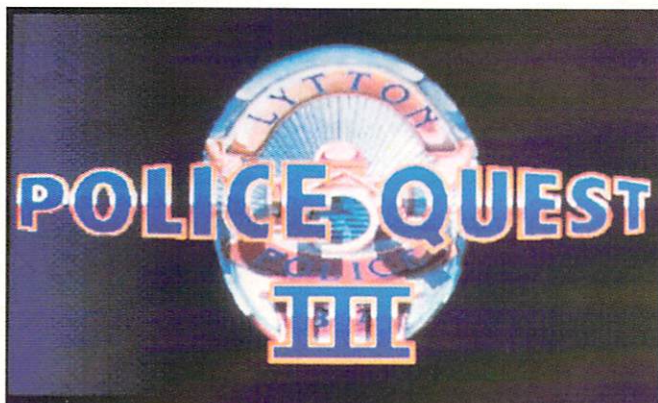
**BattleStorm**  
Titus Software  
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Chatsworth, CA 91311  
(818) 709-3693  
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(617) 731-3553  
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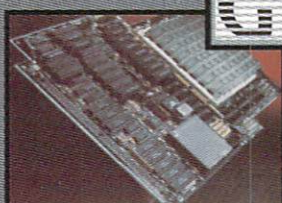
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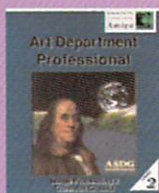
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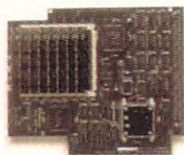


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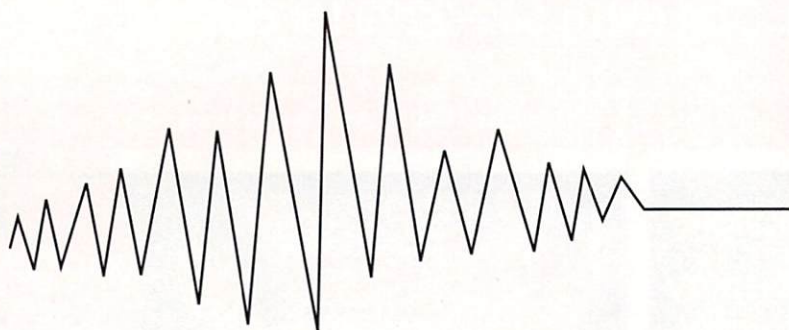
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# Feedback

edited by Paul L. Larrivée

The debate on recursion continues; more suggestions for Professional Page and LaserJet users; and an urge to help document Amiga third-party support.

## Mr. Williams Sides With Mr. Green

I'd like to come in on the side of Jonas S. Green on this discussion of "recursion." Mr. Green claims that Mr. Callaway's ARExx routine, found in AC V. 7.3, p. 91, is *not* recursive. Mr. Callaway rebuts with: "...Perhaps a quote from a second source will convince you to abandon your erroneous conception of just what recursion is." ["Feedback," V 7.7]

The quote which follows in the rebuttal is not found on page 27 of *An Eternal Golden Braid* but is found on page 127, probably a normal typo. The quote, however, is lifted out of context. So let's have the entire paragraph from *An Eternal Golden Braid*:

What is Recursion? It is what is illustrated in the *Dialogue Little Harmonic Labyrinth*: nesting, and variations on nesting. The concept is very general. (Stories inside stories, movies inside movies, paintings inside paintings... (even parenthetical comments inside parenthetical comments!))—these are just a few charms of recursion.)

However, you should be made aware that the meaning

of "recursive" in this Chapter is only faintly related to its meaning in Chapter III. The relation should be clear by the end of this Chapter.

The emphasis is mine. The rest of Chapter V, titled "Recursive Structures and Processes," is dedicated to the concept of postponement, that is, stacks. The next subheading is, in fact, "Pushing, Popping and Stacks"; the one after that is "Stacks in Music."

What appears to be Hofstadter's confusion between stacks and recursion has, in my opinion, been well known since the publication of *An Eternal Golden Braid*. It is my opinion that this apparent confusion, as well as others, is why *An Eternal Golden Braid* is a Pulitzer Prize winner, but I have rarely seen it used as a primary text for computer science.

Let us turn to an author whose books are used as primary text books in computer science, David E. Knuth. From *The Art of Computer Programming*, Chapter One, "Fundamental Algorithms," p. 305, Section 2.3, "Trees": "The definition just given is recursive, i.e., we have defined a tree in terms of trees." Or turn to S.E. Goodman and S.T. Hedetniemi, p. 134, Section 3.5, "Recursion":

In mathematics and computer programming *recursion* is the name given to the method of defining or expressing a function, procedure, language construct, or the solution of a problem in terms of itself.

I checked several text books and discovered that each in turn defined recursion and/or recursive definition as defining an algorithm in terms of itself! Perhaps a better definition—from Victor A. Wagner, Jr. of Metadigm—is: "A function defined so that it *causes itself* to be called." Terms are always important, so let us use "function" here to mean function, procedure, routine, etc., regardless of whether or not a value is returned.

The point which Mr. Callaway seems to miss is that for the function to be recursive, the *definition*, that is, the *body* of the function, must either call itself or cause another routine to eventually call the function again. Several mathematics books defined "recursive function" as a sequence which defines the next element of the sequence in terms of the current, or previous, element of the sequence. Almost all of the references I checked, including Hofstadter, make the point that a recursive definition is a finite definition; it doesn't repeat itself forever.



The way in which recursion is usually implemented by computer scientists, or, if you prefer, the way the concept of recursion is mapped into a computer language is usually via a stack. The ARExx routine shown on p. 91 of AC V. 7.3 is *not* recursive. It does illustrate another way to use stacks to accomplish a job which is easily represented by the concept of recursion. Again, Fun( Fun( Fun( Fun( n ) ) ) ) is *not* recursive. But it does use postponement to calculate a value of n massaged by four calls to Fun. What it does represent is the concept of "nesting," which can be mapped into a computer language via iteration, stacks, queues, etc. Nesting is not recursion; they are two separate concepts often used in similar cases.

I must also disagree with Mr. Green, however, since there is a nice way to say that the routine is not recursive.

Here are two recursive factorial function examples, which you can enter and run if you have ARExx.

```
/*AREXX Recursive definition*/
SAY "Factorial of 5: " Factorial ( 5 )
SAY "FactUp of 5: " actUp( 1, 5 )
EXIT( 0 )

Factorial: PROCEDURE
ARG Num2WorkOn
/* Stops the recursive descent */
if Num2WorkOn <= 0 THEN RETURN( 1 )
/* Here is the Recursion */
RETURN( Num2WorkOn * Factorial( Num2WorkOn
- 1 ) )

FactUp: PROCEDURE
ARG Num2WorkOn, MaxRep
IF MaxRep <= Num2WorkOn THEN RETURN (
Num2WorkOn )
RETURN( Num2WorkOn * FactUp( Num2WorkOn +
1, MaxRep ) )
```

The second function (FactUp) shows that, although Hofstadter talks about "recursion" always descending (decrementing the control variable, approaching values closer to zero, etc.), you can write the routine to be a recursive ascent as well!

My respects to Mr. Green, and to Mr. Callaway, whose ARExx articles are quite useful.

Clark Williams  
Ramona, CA

*The following is Merrill Callaway's response. In typesetting Mr. Callaway's letter in "Feed-back," V 7.7, AC substituted "you" for "your" and "page 27" for "page 127." These typos in no way affected the meaning of Mr. Callaway's defense. For the sake of textual compression, however, AC edited Mr. Callaway's text to read "erroneous conception" instead of "narrowly erroneous conception." It is upon the omission*

*of the word "narrowly" that Mr. Callaway bases his explanation.—PLL*

AC omitted a word which made me say something completely different to Mr. Green from what I wrote. Mr. Williams' letter derives from the misunderstanding arising from this omission. What I originally wrote to Mr. Green was that he should abandon his "erroneously narrow conception of recursion" and not his "erroneous conception." I am not disputing, nor did I ever dispute, the concept of a recursive function as set forth by Mr. Green or Mr. Williams. You guys "keep preaching to the converted" regarding that factorial program as an example of a recursive function! Reread my original article. Did I not reference in both Hawes' and Commodore's ARExx documentation *that very program* as an example of a "recursive function"?

Besides the omission, there are two reasons for the misunderstanding. First, I may have made a poor grouping of words to call the procedure in the article a "recursive function call." Now "recursive" is an adjective that modifies "call," as the context indicates. I made a distinction between a "recursive function" and a "recursive function call." On second thought, perhaps I should have called the latter a "recursive call to a function" to make the meaning more explicit. I never made the claim that fun() was recursive. Indeed in the article, I wrote that if one tried to make fun() recursive, one would get into "deep guacamole"!

The second reason is this: Some programmers have too narrow a view of what "recursive" means. I still maintain that the meaning of "recursive" in general is a superset of the meaning of "recursive function"; and, of course, I agree with Mr. Williams about what "recursive functions" are, although neither his functions nor Mr. Green's will ever find the correct number of coconuts. Again, I stand by what I originally wrote. Since Mr. Williams finds fault with Mr. Hofstadter, allow me to quote verbatim definitions from two technical dictionaries, as textbooks tend to make their own "local" rather than "global" definitions. Note the subtle differences, but all of them define "recursive". Let  $Y(n)=\text{fun}(\text{fun}(\text{fun}(\text{fun}(\text{fun}(n))))))$ . My "recursive calls"  $[Y(n)]$  match the definition of a "recursive process" and qualify as a "recursive function [MATH]" as well. Recursion is indeed very general.

*Dictionary of Scientific and Technical Terms, Fourth Edition, McGraw Hill:*

**recursion** [COMPUT SCI] A technique in which an apparently circular process is used to perform an iterative process.

**recursive** [MATH] Pertaining to a process that is inherently repetitive with the results of each repetition usually depending upon those of the previous repetition.

**recursive functions** [MATH] Functions that can be obtained by a finite number of operations, computations, or algorithms.

**recursive subroutine** [COMPUT SCI] A reentrant subroutine whose partial results are stacked, with a processor stack pointer advancing and retracting as the subroutine is called and completed.

*Dictionary of Computers, Data Processing, and Telecommunications by Jerry M. Rosenberg, Ph. D., John Wiley:*

**recursive process** A method of computing values of functions where each stage of processing contains all subsequent signs, that is the first stage is not completed until all other stages are ended.

**recursive routine** A routine that may be used as a routine of itself, calling itself directly or being called by another routine, one that itself has called. The use of a recursive routine usually requires the keeping of records of the status of its unfinished uses in, for example, a push-down list. [Mr. Williams' definition, but only *one* form of "recursive."]

Merrill Callaway  
Albuquerque, NM

### Three Suggestion for Solving Printing Problems

I have a couple of suggestions which might help to address the problems readers are having with Gold Disk's *Professional Page 3.0* printing via the HP LaserJet driver.

1. Within the PPage requester is a requester for X and Y value offsets. These permit adjusting the position of the output of the printed page. I have found that an X offset of -0.1875" and a Y offset of -0.625" (note that both are negative values) will match margins on the printed page to those on the



**MOVING?**



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screen. However, this won't permit printing within the Y offset distance of the top of the page.

2. Gold Disk should bite the bullet and write their own driver, as Soft-Logik has done for *Pagestream*. If Gold Disk is suggesting that owners buy a PostScript cartridge, they should clearly indicate in their advertising and packaging that PPage does not support LaserJet printers.

3. Why is no one asking the author of the preferences driver—Commodore Business Machines—to correct the problem? I have talked to Commodore in Canada and in West Chester about this problem since December of 1991. They now say that they have a corrected printer driver, but won't release it until AmigaDOS is upgraded. They won't send it even if I send them a diskette to put it on. I was told they were concerned about legal liabilities. Considering that this driver has been faulty since its release in 1985, that excuse is unacceptable. I can't imagine a company working in the MS-DOS/Windows area with such poor consumer assistance.

M.P. Wagner  
Fort McMurray, Alberta  
Canada

*We must wonder whether or not other LaserJet users have talked to Commodore concerning the preferences driver. Let us hear from you if you have.—PLL*

### **Tell the Post About Amiga Support**

I enjoy *Amazing Computing* very much. I read it from cover to cover, even going through articles that are not in my primary field of interest. I do plan to renew my multi-year subscription as soon as it expires. It is regrettable that there are only two Amiga-specific magazines left with the demise of *.INFO* magazine. This only leaves me with your magazine and your competitor. I do have a subscription to *Compute's* Amiga edition, but I don't consider it to be a true Amiga magazine like yours.

Of course, the above is not the real reason I am writing to you. It seems that Amiga bashing by some of the news media just won't stop. However, because of the way Commodore Business Machines markets this great computer we are sure to see articles in various publications like the

one in the July 20, 1992 edition of the *Washington Post's* business section on "Computing News." It is unfortunate that there is some truth to what the writer had to say. Nevertheless, it is apparent that the writer has not done his homework since there are numerous third-party developers who support the Amiga, as can be seen in the advertisements in your magazine and in *Amiga World*. Needless to say, the *Washington Post* article speaks for itself, for the most part.

If any *Amazing Computing* readers believe that they have a factual, cogent rebuttal to the article, they should send a letter to Mr. Donald E. Graham, Publisher, *Washington Post*, 1150 15th Street, NW, Washington, DC 20071.

Thanks for publishing a great magazine. I am looking forward to receiving future editions.

Sidney Talmud  
Bowie, MD

*Thanks for the unabashedly complimentary remarks concerning our favorite publication, *Amazing Computing* for the Commodore Amiga. You have anticipated our thoughts as you shall see when you read the editorial in the September issue. Not only should you send your rebuttals to the *Washington Post*, but as we indicate in our editorial, please forward copies to us at AC. By the way, it might be more to the point to address such mail to the Business section editor of the Post, not to the publisher. Then send a copy to Phillip Robinson, P.O. Box 1357, Sausalito, CA 94966, the author of the original article.—PLL*

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## AMAZING COMPUTING

Vol. 6 No. 7, July 1991

Highlights include:

"Firecracker 24," a review of the latest in 24-bit video boards from Impulse by Frank McMahon  
 "Proper Grammar," a review of a comprehensive spelling and grammar checker by Paul Larrivée  
 "PageStream," another entry in the word processing/desktop publishing software line, by John Steiner  
 Also, extensive Summer CES coverage!

Vol. 6 No. 8, August, 1991

Highlights include:

"AlterImage," create titling and special effects for your home videos in minutes, by Frank McMahon  
 "The Jerry Bryant Show," AC interviews Jerry Bryant, whose secret weapons for producing four hours of television a week are the Amiga and the Video Toaster  
 "Understanding Genlocks," by Matt Drabick  
 "Super 8 Meets the Amiga," easy film-to-video transfer with the addition of Amiga graphics, by Patrik Beck  
 "Looking Good with B.A.D.," a review of Centaur Software's disk optimizing program by Rick Manasa  
 Also, AC continues the extensive coverage of the Summer CES in Chicago!

Vol. 6 No. 9, September 1991

Highlights include:

"Bars&Pipes Professional," a review by Phil Saunders  
 "Frame Buffer Face-Off," an overview of framebuffer, by Frank McMahon  
 "DynaCADD," a review by Doug Bullard  
 Plus:  
 Special reports on Multimedia applications  
 AND  
 Super show coverage from Australia and Orlando!

Vol. 6 No. 10, October 1991

Highlights include:

"Art Department Professional," a review of ASDG's powerful program by Merrill Callaway  
 "ShowMaker," beyond desktop video, by Frank McMahon  
 "APL and the Amiga," by Henry Lippert  
 Plus:  
 An ARexx double feature and a special education section

Vol. 6 No. 11, November 1991

Highlights include:

"Connecting Your Amiga to the Sharp Wizard," by Merrill Callaway  
 "Epson 300c Flat Bed Scanner," review by Merrill Callaway  
 "Impact Vision 24," a sneak preview of GVP's powerful 24-bit board, by Frank McMahon  
 "CSA Mega-Midget Racer," a review of CSA's powerful accelerator board, by Mike Corbett  
 "Why Should You Use the CLI?" three sound reasons to use the command line interface, by Keith Cameron  
 Vol. 6, No. 12, December, 1991  
 Highlights Include:  
 "Audition 4," a review of a great sound sampler package by Bill Frazier  
 "Draw 4D Pro," a look at ADPSEC's latest update to Draw 4D, by R. Shams Mortier  
 "Newsletter Basics," a tutorial on how to create professional newsletters using PageStream, by Pat Kaszycki  
 "AmigaDOS for the Beginner," another look at the basics of AmigaDOS, by Keith Cameron  
 ALSO: Coverage of AmiEXPO Oakland and the Köln, Germany, show!

Vol. 7, No. 1, January, 1992

Highlights Include:

"Memories," A500 memory expansion, by Sam Ammons  
 "Help for the Help Key," by Rick Manasa  
 "Getting the most from your RAMdisk," by Keith Cameron  
 "Installing and Using an IBM mouse with Your Amiga," by Phillip R. Combs  
 "DePuzzle," a puzzle-solving program for brain teasers, by Scott Palmateer  
 "ZipTerm," learn how to use Console.device and Serial.device while creating a telecommunications program, by Doug Thain  
 ALSO: Coverage of Germany's Amiga '91 and London's World of Commodore shows.

Vol. 7, No. 2, February, 1992

Highlights Include:

"Deduct That Interest with FC CALC," by Rick Manasa  
 "Finding the Right Multimedia Fit," by Dave Spittler  
 "Images in Dentistry," by Ken Larson  
 "Signmaking on the Amiga," by Karen Pringle  
 "Perfect Pages," how to produce PostScript-quality pages without buying a PostScript laser printer.  
 ALSO: Coverage of Toronto's World of Commodore Show

Vol. 7, No. 3, March, 1992

Highlights Include:

"The Miracle Piano Teaching System," by Christopher Piper  
 "DeluxePaint IV," by R. Shams Mortier  
 "Semi-Automatic Painting and Animation," by Kevin Lude  
 "Screen Photography," taking pictures of your Amiga screen, by Pat Murphy  
 Also, a special section on Amiga Graphic Design and a look at some special Amiga Artists.

Vol. 7 No. 4 April, 1992

Highlight include:

"Foundation," a review by Dave Spittler  
 "AdPro 2.0," review by Merrill Callaway  
 "ATonce Plus," review by Rich Mataka  
 Also, construct a database using your favorite authoring system, customize your start-up sequence, and create and produce your own video!

Vol. 7 No.5 May, 1992

Highlights Include:

"Pelican Press", a review of this entry-level DTP package by Jeff James  
 "AdIDE40 Amiga 500 Hard Drive Kit", review by Merrill Callaway  
 "Building an Amiga MIDI Interface", super project by John Iovine  
 Also: AC's annual Desktop Publishing Overview! This issue includes a look at the top DTP packages as well as a study of printers, fonts, and clip art available for the Amiga.

Vol.7 No.6 June 1992

Highlights Include:

"Freeze Frame Video Recorder", review by Merrill Callaway  
 "HP DeskJet Color 500C", review by Richard Mataka  
 "MREAD", a programming project by Chuck Wardin  
 Plus: Don't miss an exciting edition of our ARexx feature by Merrill Callaway or 3-D animation with DPaint IV in "The Video Slot", by Frank McMahon.

Vol.7 No.7 July 1992

Highlights Include:

"Modem Rundown", A comprehensive look at modems for the Amiga  
 "G-Force 040", a review of GVP's 040 accelerator, by Rich Mataka  
 "SuperJam", a review of this superb music maker from The Blue Ribbon Soundworks, by John Steiner  
 "FoundEx", a tutorial using Foundation's stacks and scripts, by Dave Spittler  
 Plus, a look at telecommunications and the Amiga including hardware, software, and services.

Vol. 7 No. 8 August, 1992

Highlights Include:

"Digi-View 4.0", by Matt Drabick  
 "GVP's Digital Sound Studio", review by Matt Drabick  
 "3D Effects from 2D Amiga Art", tutorial by Shams Mortier  
 Plus:  
 Super ARexx Column for July!  
 Video Toaster UpDate featured in The Video Slot!  
 And Much More!

Vol.7, No. 9, September, 1992

Highlights include:

"Professional Calc," review of Gold Disk's premier accounting software by Bill Frazier.  
 "True BASIC 2.0" A review of the latest release of the True BASIC language by Paul Castonguay.  
 "Developing Desktop Savvy," a special project for your favorite DTP software. Using specialty papers to create brochures and pamphlets, by Pat Kaszycki.  
 "The Video Slot" This month, learn about the new features of Imagemaster, by Frank McMahon.  
 Don't miss AC's super game coverage in Diversions.

## AC's TECH

AC's TECH, Vol. 1, No. 2

Highlights Include:

"CAD Application Design: Part I," by Forest W. Arnold  
 "Programming the Amiga's GUI in C: Part I," by Paul Castonguay  
 "Intuition and Graphics in ARexx Scripts," by Jeff Glant  
 "UNIX and the Amiga," by Mike Hubbard  
 "A Meg and a Half on a Budget," by Bob Blick  
 \_and more!

AC's TECH, Vol. 1, No. 3

Highlights Include:

"CAD Applications Design—Part II," by Forest Arnold  
 "C Macros for ARexx?" by David Blackwell  
 "VBROM: Assembly Language Monitor" by Dan Babcock  
 "Programming the Amiga's GUI in C—Part II" by Paul Castonguay  
 —and more!

AC's TECH, Vol. 1, No. 4

Highlights Include:

"GPIO—Low-Cost Sequence Control" by Ken Hall  
 "Programming with the ARexxDB Records Manager" by Benton Jackson  
 "The Development of a Ray Tracer—Part I" by Bruno Costa  
 "The Varafire Solution—Build Your Own Variable Rapid-Fire Joystick" by Lee Brewer  
 "Using Interrupts for Animating Pointers" by Jeff Lavin  
 —and more!

AC's TECH, Vol. 2, No. 1

Highlights Include:

"Build Your Own SCSI Interface" by Paul Harker  
 "CAD Application Design—Part III" by Forest Arnold  
 "Implementing an ARexx Interface in Your C Program" by David Blackwell  
 "The Amiga and the MIDI Hardware Specification" by James Cook  
 —and more!

AC's TECH, Vol. 2, No. 2

Highlights Include:

"Programming the Amiga in Assembly Language Part 2", by Forest Arnold  
 "Implementing an ARexx Interface in Your C Program, Part 2", by David Blackwell  
 "Iterated functions Systems for Amiga Computer Graphics", by Laura Morrisson  
 "MenuScript", creating professional looking menus easily and quickly, by David Ossorio  
 And Much More!

# Back Issue Index

What have you been missing? Have you missed information on how to add ports to your Amiga for under \$70, how to work around *DeluxePaint's* lack of HAM support, how to deal with service bureaus, or how to put your Super 8 films on video tape, along with Amiga graphics? Do you know the differences among the big three DTP programs for the Amiga? Does the ARexx interface still puzzle you? Do you know when it's better to you use the CLI? Would you like to know how to go about publishing a newsletter? Do you take full advantage of your RAMdisk? Have you yet to install an IBM mouse to work with your bridgeboard? Do you know there's an alternative to high-cost word processors? Do you still struggle through your directories?

Or if you're a programmer or technical type, do you understand how to add 512K RAM to your 1MB A500 for a cost of only \$30? Or how to program the Amiga's GUI in C? Would you like the instructions for building your own variable rapid-fire joystick or a 246-grayscale SCSI interface for your Amiga? Do you use easy routines for performing floppy access without the aid of the operating system? How much do you really understand about ray tracing? The answers to these questions and others can be found in *AMAZING COMPUTING* and *AC's TECH*.

For more information call  
**1-800-345-3360**



# The Fred Fish Collection

Below is a listing of the latest additions to the Fred Fish Collection. This expanding library of freely redistributable software is the work of Amiga pioneer and award-winning software anthologist, Fred Fish. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current **AC's Guide To The Commodore Amiga** available at your local Amazing Dealer.

which plays digitized sound samples when you

**F2C** A program that translates Fortran 77 source into C or C++ source. F2C lets one portably mix C and Fortran, and makes a large body of well tested Fortran source code available to C environments. Amiga port done for SAS/C 5.10B, and includes libraries for use with SAS/C. Includes full source in C. Author: S. I. Feldman, David M. Gay, Mark W. Maimone. N. L. Schryer; Amiga port by Martin Hohl.

**Fred Fish Disk 676**  
FBM An Amiga port of the Fuzzy PixMap image manipulation library. This package allows manipulation and conversion of a variety of color and B&W image formats. Supported formats include Sun rasterfiles, GIF, IFF, PCX, PBM bitmaps, "face" files, and FBM files. Also has input converters for raw images, like Digi-View files, and output converters for PostScript and Diablo graphics. Besides doing format conversion, some of the other image manipulation operations supported include rectangular extraction, density and contrast changes, rotation, quantization, halftone grayscale, edge sharpening, and histograms. Disk 676 contains m68000 binaries and docs, disk 677 contains m68020/m68881 binaries, and disk 678 contains the sources. Version 1.0. Author: Michael Mauldin; Amiga port by Martin Hohl.

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**MakeLink** A replacement for the original AmigaDOS 2.0 MakeLink command. Supports both hard and soft links. Residentable. This is version 1.1, includes source. Author: Stefan Becker.

**Mostra** Mostra is a shareware IFF utility featuring real-time unpacking scroll, dozens of options, "smart" analysis of any IFF file (FORMs, LISTs, ... also nested ILBM), total control over display modes, simple slideshow processing, pattern matching, SHAM, an external link to show Dynamic Mode pictures, double buffering, fast decompression, color cycling, TeXdocs, startup files for easy custom configuration and complete WB support, through ToolTypes and Style icons! This is version 1.07, an update to version 1.06 on disk 670, and fixes a bug with parsing IFF files. Binary only. Author: Sebastiano Vigna.

**PM** A tool that monitors the Amiga system's CPU usage using some hooks that are available in 2.04 EXEC. The program uses the high resolution EClock timer to get real time values for the amount of time the processor spends running tasks and the amount of time it spends between tasks (in task switch and in sleep). Version 37.8, binary only. Author: Michael Sinz.

**Fred Fish Disk 678**  
FBM An Amiga port of the Fuzzy PixMap image manipulation library. This package allows manipulation and conversion of a variety of color and B&W image formats. Supported formats include Sun rasterfiles, GIF, IFF, PCX, PBM bitmaps, "face" files, and FBM files. Also has input converters for raw images, like Digi-View files, and output converters for PostScript and Diablo graphics. Besides doing format conversion, some of the other image manipulation operations supported include rectangular extraction, density and contrast changes, rotation, quantization, halftone grayscale, edge sharpening, and histograms. Disk 676 contains m68000 binaries and docs, disk 677 contains m68020/m68881 binaries, and disk 678 contains the sources. Version 1.0. Author: Michael Mauldin; Amiga port

by Martin Hohl.

**PPLib** A shared library to make life easy for people who wish to write programs that support PowerPacker. Loading crunched files from C or assembly is made fast, short and easy. This is release 1.5, an update to version 1.4 on disk 623. Includes example source. Author: Nico Francois.

**ReOrg** ReOrg is a fast disk optimizer that can be used for floppy disks and hard disks. Supports new Kickstart 2.04 features including hard and soft links, and High-Density drives. Includes program versions in English and German for use with Kickstart 1.2/1.3 or Kickstart 2.04. Versions 1.1 and 2.1, shareware, binary only, first release. Author: Holger Kruse.

**ResAnalyzer** An OS 2.04 compatible ResModules monitor. ResAnalyzer can show you all information related to Captures, KickMemPtr, KickTapPtr, KickChkSum and ResModules entries in the ExecBase structure. A great help for resident modules developers and for people who want to check if something (like a virus) is resident in memory. ResAnalyzer can detect ResModules OS 2.04 system flags. Version 2.2, binary only. Author: Silvio Umberto Zanzi.

**Fred Fish Disk 679**  
Backcoupling A simulation of screen-camera-backcoupling. Generates a series of backcoupled pictures out of a start picture. You can change several parameters, such as sharpness, rotation angle and signal translation. Includes both German and English versions. Version 1.0, binary only. Author: Michael Gentner.

**RayShade** Rayshade is a ray tracing program ported to the Amiga from UNIX. Rayshade's features include eleven types of primitives (blob, box, cone, cylinder, height field, plane, polygon, sphere, torus, flat- and Phong-shaded triangle); composite objects; point, directional, and extended (area) spot, and quadrilateral light sources; solid procedural texturing and bump mapping of primitives; antialiasing through variable-rate "jittered" sampling; arbitrary linear transformations on objects and texture/bump maps; Use of uniform spatial subdivision or hierarchy of bounding volumes to speed rendering; options to facilitate rendering of stereo pairs; rudimentary animation support, and more. This is version 4.0, patchlevel 6, and includes sources in C. The modifications for Amiga & SAS/C are distributed as diff files. Some example input files are also included. This is an update to version 3.0 on disk 596. Author: Craig E. Kolb, Amiga Port by Martin Hohl.

**Fred Fish Disk 680**  
ATAP Adobe Type Access Package allows users of Professional Page (Gold Disk, inc.) and compatible applications to use typefaces available from Adobe Systems or other vendors. Includes AFM and screen fonts from the Macintosh, and a Macintosh/USA1 keymap. Includes source in C for AFM converter and font unpacker. Author: Gordon Fecyk.

**SatTrack** A satellite tracking program. Allows for selection of a data-base that can contain up to 300 satellites. Tracks satellites on a graphics display of the world. All graphics are IFF-compat, allowing for loading of display to standard painting program. Allows for input of satellite information using either standard data format or by simple user input. All operations use standard windows and menus. SatTrack has a simulation mode that allows for predictions in the future. This is version 2.1A, demo copy, binary only. Author: Randy Stackhouse.

**VirusChecker** A virus checker that can check memory, disk bootblocks, and all disk files for signs of most known viruses. Can remember nonstandard bootblocks that you indicate are OK and not bother you about them again. Includes an AREXX port. Version 6.06, an update to version 6.05 on disk 669. Binary only. Author: John Veldhuis.

**Fred Fish Disk 681**  
Term A gift-ware telecommunications program written for AmigaOS release 2.x (Kickstart 37.175 and Workbench 37.67 or higher required). Features include total configurability, full AREXX control, Xpr-transfer support, filetype-identification after download, cut & paste/point-and-click on screen, auto upload and download, scrollable review buffer of unlimited size, solid and fully-featured VT100/VT220/ANSI emulation, optional fast atomic terminal emulation, hotkey support, powerful phonebook and dialing functions, ability to save and print the contents of the screen as IFF-ILBM or ASCII file, full overscan and screen resolution support (new ECS screen modes included), asynchronous operation and a lot more. Comes with seven Xpr-transfer libraries (ascii, jmodem, kermi, quickb, xmodem, ymodem & zmodem) and documentation both in German and in English. This is version 2.2a, an update to version 1.9c on disk 589. Includes full source in C and assembly language. Author: Olaf 'Olsen' Barthel.

**Fred Fish Disk 682**  
AmiBack Demo version of Ami-Back v2.0, a nice backup utility for the Amiga. Features include backup to any AmigaDOS compatible device (such as floppies, removable hard disks, fixed media hard disk, and tape drives), compression, no copy protection,

configuration files, complete backups, incremental backups, selective backups, file exclusion filter, setting of archive bit, password protected backups, online help, AREXX support, etc. Demo version does not have restore. Version 2.0a, an update to version 1.04 on disk 517. Binary only. Author: MoonLighter Software.

**CyberCron** A cron utility for AmigaDOS 2.0. Uses the new, more flexible, AmigaDOS 2.0 technique for running programs. Offers an extended set of options that may be specified for any given event. Version 1.3, an update to version 1.2 on disk 656. Includes source. Author: Christopher Wichura.

**ReqChange** A little program that patches the system requesters to use the similar requesters in ReqTools library. It also patches the ARP requester and all requesters in Req library. It is very flexible, allowing you to modify where the requester should appear, which of the libraries to patch, etc. Includes a pair of small utility programs, GetFile and ReqAsk, that can be used in scripts to put up file requesters or other requesters. Version 1.08, includes source. Author: Magnus Holmgren.

**RexxHostLib** This is a shared library package to simplify the AREXX host creation/management procedure. REXX-message parsing is also included making it possible to control AREXX from programs such as AmigaBASIC (can you imagine AmigaBASIC controlling AmigaTeX?). This is version 37.1, an update to version 36.14 on disk 403. This version has been updated for use with Kickstart 2.0. Includes source in C and assembly language. Author: Olaf 'Olsen' Barthel.

**Zoom** A fast and efficient floppy disk archiving utility based on the data compression / decompression algorithms used by the library. Has an intuition and a Shell interface, fully supports Kickstart 2.0, is able to add texts and notes to archived output files, knows 274 different bootblock viruses, includes a number of compression parameters (such as encryption of the output file) and a lot more. Version 5.4, update to FF459. Binary only. Author: Olaf 'Olsen' Barthel.

**Fred Fish Disk 683**  
GMC A console handler with command line editing and function key support. GMC provides extended command line editing, function key assignment in four levels, extended command line history, online help for functions in the handler, and an iconify function. Also includes an output buffer (dump to printer and window), filename completer, script function, undo function, prompt beeper, pathname in window title, close gadget for KS 2.0, etc. This is version 9.13, an update to version 9.11 on disk 587, with some new features and some bug fixes. Shareware, binary only. Author: Goetz Mueller.

**KFAST** Key Frame Animator with Skeletal Technique. A collection of functions to implement a two-dimensional object based animator designed to use the skeletal technique of modeling objects and simple tweening to free the animator from the labors of producing smooth transitions between key drawings. A crude demo program has been included utilizing the routines. Version 0.5, includes source. Author: Craig M. Lever.

**LE-NAG** LeverEdge NAG is a program to remind you of events before you miss them. Events can be scheduled to occur once or repeat daily, weekly, monthly or yearly. You can be alerted of the event in a number of ways from a screen flash to a message requester. Version 92.05.02, shareware, binary only. Author: Craig M. Lever.

**PrintFiles** A freely redistributable print utility to replace the standard workbench Printfiles command. Supports AREXX, application icon, and setting up a print list with unlimited number of entries. Requires OS 2.04. Includes two versions, V0.91e in English and V0.91d in German. This is an update to V0.9 on disk 632. Includes source. Author: Karlheinz Klingebiel.

**ShowLink** Tool to list hardlinks. Also tells which file or directory the link points at. Version 1.1, includes source in Oberon. Author: Christoph Teuber.

**Fred Fish Disk 684**  
AL Archive Lister. Recognizes and lists contents of archives created by ARC, LHARC, LHA, LZ, ZOO, APE, ZIP, WARP, DMS and ZOOM. AL is fully standalone and doesn't call upon the original archivers to list contents. Binary only. Author: Oliver Wagner.

**CpuCir** A hack in the spirit of "CpuBlt". Replaces the BitClear call in graphics library with a 68030 optimized processor routine. Includes source in assembly. Author: Oliver Wagner.

**EmptyHandler** Another example of a filehandler. This one creates empty files of any given length. Includes source in C. Author: Oliver Wagner.

**MagPages** A software package that allows you to create and display a disk-based magazine. The magazine produced is of a similar format to that of a traditional paper magazine. You can combine text and graphics on a single page, branch to different sections by clicking on icons and play sound and music. Features a full intuition driven interface. Version 1.30, an update to version 1.0 on disk 372, with many new features, bug fixes, and an improved user interface. Shareware, binary

only. Author: Mark Gladding.

**PlaySound** A tool to replay IFF-BSVX sounds using double-buffering while the sound file is being loaded from disk. Also serves as an IFF-BSVX library and audio device programming example. Requires Kickstart and Workbench 2.04 (or higher). Version 1.1, includes source in C. Author: Olaf 'Olsen' Barthel.

**Fred Fish Disk 685**  
DiskPrint A label database which prints and stores disk labels for 3.5" and 5.25" disks. Primarily created as a combined database and print utility for FD disks, it includes easy-to-use label library functions (like printing labels for a whole FD series in one turn or multiple print of one label) and labels for most FD disks which are available within a few mouse clicks. Features include a fast search routine, user-definable label layout, different label sizes, intuition-based disk directory read-in and a lot more. Very configurable. Works fine with every printer connected to the parallel port and AmigaOS 1.2, 1.3, and 2.x. This is version 3.51, a major update to version 3.4.3 on disk 567. Both English (PAL & NTSC) and German versions. Shareware, binary only. Author: Jan Geissler.

**FreeCopy** FreeCopy is unlike most copiers in that it does not actually copy disks. It removes the protection so disks can easily be backed up with almost any program, and in some cases be installed on your hard drive. This is version 1.8, an update to version 1.4 on disk 498. Public domain, binary only. Author: Greg Pringle.

**MCMaster** MCMaster is another cassette tape cover printing utility which should work together with any printer which supports pica and fine. Other features include a search function and a list function which allows you to put all the song names in a list gadget to scroll around. Version 1.1, freeware, includes source in C. Author: Michael Watzl.

**PublicManager** Public screen tool which opens public screens which are freely configurable (depth, size, font, etc) and have their own menu (palette, quit, tools, etc). Includes two little tools to modify the public screen modes and the default public screen. Version 1.2, freeware, includes source in C and assembly. Author: Michael Watzl.

**YatZ** One player Yatzee game. This program was written to take up little memory and to multitask nicely. This is version 1.1, an update to version 1.0 on disk 498. Public domain, includes source in C. Author: Greg Pringle.

**Fred Fish Disk 686**  
BonAppetit Bon Appetit is a recipe database manager that automates recipe collections and allows for far more flexibility than regular index cards. You can search for recipes by title, keyword, or ingredient. You can import recipes in BonAppetit's own format or 3 popular MS-DOS formats, so you can quickly build a recipe collection. Includes complete recipe utilities and 24 recipes to get you started. Version 1.3. New features include recipe browsing, mass export, less cryptic error messages, and many bug fixes. Shareware, binary only. Author: Boris Shor.

**DWFlcons** A collection of icons for Workbench 2.0, including some that are for an interlaced Workbench. Author: David W. Ferguson.

**DWFPresets** A collection of AmigaDOS 2.0 presets for pointers, palettes, screen modes, and Workbench backdrop patterns. Author: David W. Ferguson.

**MutBox** Request utility which can be used in scripts. Unlike other tools (QuickRequest, Request, etc) it uses checkbox gadgets. Includes source in C. Author: Michael Watzl.

**NewPos** A tool to resize and move the active shell window directly or from scripts. Freeware, includes source in assembly. Author: Michael Watzl.

**Fred Fish Disk 687**  
AmigaEMS A utility program for Amiga bridgeboard users that allows you to use any amount of Amiga memory as expanded memory on the bridgeboard. AmigaEMS is LIMEMS 4.0 compatible. This is version 1.01, shareware, binary only. Author: drs. A. D. Hagen.

**FractBlank** A commodities screen blander written for Kickstart and Workbench 2.04 (or higher). When running will blank the screen and start to draw real plane fractals such as described in the September 1986 issue of Scientific American. The resulting images may remind you of spiders' webs, lace or even the Chladian patterns formed by grains of sand stirred across a vibrating surface. This is version 2.2, an update to version 1.8 on disk 588, and includes numerous bug fixes and enhancements (such as a new fractal type and a font-sensitive user interface). Includes source in C and assembly language. Author: Olaf 'Olsen' Barthel.

**PowerPlayer** A very powerful, user friendly and system friendly module player. It can handle nearly all



useful module-formats (Noisetracker, MED, Oktalyzer, etc.), can read powerpacked modules and comes along with its own cruncher that uses the powerful lib library written by Krell/Barthel. Needs the powerpacker library and the retools library to run, both included in the package. Also includes some sample modules. This is version 2.7, an update to version 2.1 on disk 647, freeware, binary only. Author: Stephan Fuhrmann

**SFCoder** A program that allows you to encrypt and decrypt files by using a password. Uses complex routines to assure the security of your data. Requires OS 2.0 to run. Version 3.0, freeware, binary only. Author: Stephan Fuhrmann

**XPRD** eXternal Protocol Driver. A standalone driver utility for doing file transfers with XPR libraries. Has many features like carrier checking and return code redirection (for "stupid" languages). Includes source in C. Author: Oliver Wagner

**XSB** eXternal ScreenBlender Standard. Documentation and examples of a new library standard for fancy screenblenders. Includes Standard, Shuffle and Psychedelic blenders. Public Domain, source in C is included. OS 2.0 only. Author: Oliver Wagner

**Fred Fish Disk 688**  
**OctaMEDPlayer** Standalone player program for playing songs made with OctaMED. Can load sng+samples-format and MMD0/MMD1-modules made with MED 2.10 or later, or any version of OctaMED. Can play standard four channel Amiga songs, MIDI songs, 5 to 8 channel OctaMED songs, and multi-modules. Has a nice 2.0 look and works fine under 2.0 as well as 1.3. Version 3.00, binary only. Author: Teijo Kinnunen and AMIGANUTS UNITED

**ScreenSnap** ScreenSnap allows you to save and close screens of any application. It requires OS 2.04 and includes German documentation. This is version 1.12, binary only. Author: Oliver Graf, T.O.M. Software Wuppertal

**UpdateIcon** A tool to add icons to files and drawers which do not yet have icons attached, to update the default tools and to reset the positions of icons. Very handy for installation scripts. Requires Kickstart and Workbench 2.04 (or higher). Version 1.0, includes source in C. Author: Olaf 'Olson' Barthel

**Fred Fish Disk 689**  
**AssignWedge** An AssignX clone, redesigned from the ground up, which fixes a couple of potential bugs in the original program and is also able to cope with an internationalized operating system. Kickstart and Workbench 2.04 or higher required. Version 1.1, source in C is included. Author: Olaf 'Olson' Barthel

**Phone** A funny strategy game. Your goal is to connect everyone to the phone system without turning out of wire. The country in which these people live is full of high mountains, deep rivers, and highly frequented roads, so connecting everyone up may not be easy. Binary only. Author: Tobias Eckert

**TKED** TKED is a very comfortable Intuition-based ASCII editor. It can read texts packed with PowerPacker, has user-definable menus, a comfortable AREXX-interface with 102 commands, an interface to some errorlogs for programmers, macros, undo, supports foldings, and many other features. TKED is reentrant and can be made resident. It also checks itself for link-viruses. Version 1.05, an update to version 1.00a on disk 620. Binary only. Author: Tom Kroener

**Fred Fish Disk 690**  
**FastGif** A fast GIF87 file viewer written in very optimized asm, but displays only pictures with no more than 32 colors. Supports overscan, NTSC & PAL display, allows scrolling for big pictures. Version V1.00, binary only. Author: Christophe Passuello

**Find** Yet another file find utility, different from other programs of this kind in that it requires Kickstart and Workbench 2.04 (or higher) to run, sports a font-sensitive user interface, includes Workbench Applcon/AppWindow support, filetype identification and other goodies. Version 1.7, includes source in C and assembly language. Author: Olaf 'Olson' Barthel

**HDfixer** Some of the newer A3000's have high density floppy drives. In the 37.175 version of kickstart, HD disks are not completely supported in HD mode. This program patches the system so that kickstart V37.175 versions are able to use 1.71 MB HD disks in the floppy drive. Requires Workbench 2.04. This is version 1.10, an update to version 1.00 on disk 645. Binary only. Author: Peter-Iver Eder

**Rescue** A non-multitasking shoot'em up game with smooth scrolling in three directions, four different pieces of music, highscore list, cheat mode, etc. Automatically notices if started on an NTSC or PAL machine, and uses full PAL screen or NTSC overscan screen. Binary only, shareware. Author: Tobias Eckert

**VirusHunter** A harmless screen hack. Author: Tobias Eckert

**Fred Fish Disk 691**  
**CManual** Disk 1 of a 5 disk distribution of one of the largest collections of documents, examples, and utilities in C for the Amiga. It consists of six manuals, with more than 40 chapters, 175 fully executable examples complete with source code, and several utilities and other goodies. The manuals describe how to open and work with Screens, Windows, Graphics, Gadgets,

Requesters, Alerts, Menus, IDCMP, Sprites, VSprites, AmigaDOS, Low Level Graphics Routines, etc. They also explain how to use your C Compiler and give you important information about how the Amiga works and how your programs should be designed. When unpacked, the manuals and examples nearly fill up twelve standard Amiga floppies. This is version 3.0, an update to version 2.0 on disks 456 and 457. Because of its size, it is distributed on five library disks, 691 through 695. Author: Anders Bjørn

**Fred Fish Disk 692**  
**CManual** Disk 2 of a 5 disk distribution. For full description, please see FF691. Author: Anders Bjørn

**Fred Fish Disk 693**  
**CManual** Disk 3 of a 5 disk distribution. For full description, please see FF691. Author: Anders Bjørn

**Fred Fish Disk 694**  
**CManual** Disk 4 of a 5 disk distribution. For full description, please see FF691. Author: Anders Bjørn

**CrossMaze** A crossword puzzle game where the player is given the words but no clues. The object is to find a way to place all the words back into the puzzle. Options include 10, 20, or 30 word games with one or two players. Version 1.0, binary only. Author: James Butts

**Kan** A program that patches a replacement delete function into the DOS library. This program will simulate the Trashcan function provided by Workbench. Support programs provided to allow automatic purging of Kan directory from startup sequence. Compatible with 1.3, 2.0 and Amiga 3000. Version 1.0a, an update to version 1.0 on disk 660. Binary only. Author: James Butts

**PgmToShd** Takes a standard PGM format graphics image and creates from it a PPM image containing information to view black and white images in 151 shades of gray instead of the Amiga's 500 and 2000. It uses the monochrome composite video output jack available on the Amiga 500 and 2000, so provided you have one of these computers and a monitor capable of receiving its input through composite video, no modifications are required to the Amiga. The PBMPlus library of graphics manipulation routines is required to make use of this program, as well as a standard IFF viewer such as Mostra. A sample test image is included. This is version 1.0, binary only. Author: Dan Charrois

**Fred Fish Disk 695**  
**CManual** Disk 5 of a 5 disk distribution. For full description, please see FF691. Author: Anders Bjørn

**ICalc** A powerful calculator with many features, including userdefined variables and functions, C-style programming constructs, complex number calculations and more. Has comprehensive instructions, and numerous examples. This is version 2, a significant update to version 1.1 on disk 550. Binary only, source available from author. Author: Martin W. Scott

**PPData** A small utility for crunching data files using Nico Francois' powerpacker library. Requires Kickstart 2.0 or later. Includes source. Author: Martin W. Scott

**Fred Fish Disk 696**  
**CLITools** Two small shell commands, touch and time, which behave like their UNIX cousins, and can be made resident. Kickstart 2.0 or later required. Includes source. Author: Martin W. Scott

**Drivers** Printer drivers for the Canon BJ10, BJ20, BJ130, BJ300, BJ330, and the 9 pin Epson mode Star printers. Includes preferences programs for controlling additional options such as margin, timeout, job end signal, arXon switch box, greyscale conversion function, customized tab stops, default typeface, and more. Binary only. Author: Wolf Faust; distributed by Canon Europe N.V.

**IFSLab** An Iterated Function System fractal generator. This one focuses on the "Collage Theorem". It permits you to draw an approximate outline of the planned fractal, then create the collage directly, jigsaw-puzzle style, from actual reduced images of the outline that you can manipulate and deform with the mouse. The attractors of the resultant IFS codes can be rendered in black and white or in grayscale, and saved to IFF files. Version 1.0, includes source in C. Author: Nathan Zeldes

**MemSnap** A small memory monitor useful for seeing how much memory other programs take up. Based on a program called Memeter, which broke under Kickstart 2.0. Requires Kickstart 2.0 or higher. Includes source. Author: Martin W. Scott

**TinyClock** A cute little analog clock with lots of features, including pop-to-front, hourly chime, and alarm. Size and colors used are configurable, and it uses very little memory or cpu time. Requires Kickstart 2.0 or higher. Binary only. Author: Martin W. Scott

**WindowTiler** A WB2.0 commodity for arranging windows. Comes with many tool types to help customize it. Supports virtual screen users, tiling, cascading, refusing windows & screens, exploding windows, etc. This is version 2.1b, an update to version 1.2.1 on disk 623, with many enhancements and bug fixes. Binary only. Author: Doug Dyer

**Fred Fish Disk 697**  
**Hackdisk** A complete replacement for trackdisk device minus support for 5.25 inch and 150RPM floppies. It offers a verify option and is faster than trackdisk 2.0. Hackdisk is supplied as a RomTag module and may be RamKick'ed or

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placed directly in the Kickstart ROM. Free for non-commercial use, assembly source included. This is version 1.0. Author: Dan Babcock

**HiSpeed** A high speed printing utility for DeskJet printers. Output is reduced to about 1/4 of its original size. The maximum processing speed is 4 pages/min. Supports ANSI ESC codes (e.g. Italics), single or double sided printing, multiple copies, and free layout. Two fonts are available. DeskJet RAM cartridge required. Version 2.7, shareware, binary only. Author: Dietmar Eliert

**QMouse** An unusually small and feature-packed "mouse utility". Was inspired by, but not derived from, the original QMouse by Lyman Epp. Features include automatic window activation (like WinX), top-line blanking for A3000/A2320 users, systemfriendly mouse blanking, mouse acceleration/threshold, "PopCLI", click-to-front/back, "SunMouse", "NoClick", "WildStar", Northgate key remapping, and more. Requires Kickstart 2.0, but is not a commodity. Only 3K. Version 2.10, public domain, assembly source included. Author: Dan Babcock

**TypoGrapher** A softfont editor package for 24-pinwriters and DeskJet printers (any model). Editor supports Laser fonts, DeskJet fonts, Amiga fonts, pinwriter fonts and IFF files. Features include about 40 drawing commands, special effects (e.g. 3D look), import/export of IFF images, generation of width tables, and more. Includes several tools for easy download (e.g. simulation of "soft" font cartridges). Requires at least 1Mb of memory. Version 2.05, shareware, binary only. Author: Dietmar Eliert

**Fred Fish Disk 698**  
**SCRAM500** The first of a series of Public Domain "XtWare" hardware projects for the Amiga. On this disk you will find the design for an 8Meg RAM and SCSI controller for the Amiga 500 (SCSI RAM for the 500 = SCRAM 500). You will also find an order form to obtain PCB, chips and whatever you need to build one. The SCRAM 500 is easy to build, cheap and should be useful to a lot of people. Included in this distribution is complete documentation on how to assemble a SCRAM 500, notes for Amiga 1000 owners, a description of the custom chips, design notes, troubleshooting guide, user's manual, bill of materials, 12 HPGL plot files for schematics and PCB layout, hard drive partitioning software, a mountable device driver, a ROMable driver, and more! Author: Norman Jackson

**Fred Fish Disk 699**  
**EZasm** Combines 68000 assembly language with parts of C. Produces highly optimized code. Uses C-like function calls (supports all 2.04 functions), braces, "else", "if" support, and much more. Comes bundled with A68k and Blink, for a complete programming environment. This is version 1.7, an update to version 1.6 on disk 592. Includes example source and executable files. Binary only. Author: Joe Siebenmann

**IFFConvert** A program to convert the different compression methods of IFF ILBM files. It supports the normal compression, a new compression method that compresses column by column instead of row by row, and uncompressed files. Version 1.11, includes source. Author: Matthias Meixner

**MungWail** Munges memory and watches for illegal FreeMem's. Especially useful in combination with Enforcer. Output can go to either the serial or parallel port. Includes a new MungList program that examines used memory areas for MungWail tag info, and outputs a list of who

owns the various pieces of allocated memory, their sizes, etc. Can even identify the owner of the memory by task name. This is version 37.52, an update to version 37.51 on disk 659. Binary only. Author: Commodore Amiga; submitted by Carolyn Scheppner

**ReOrg** ReOrg is a fast disk optimizer that can be used for floppy disks and hard disks. Supports new Kickstart 2.04 features including hard and soft links and High-Density drives. Includes program versions in English and German for use with Kickstart 2.04 only. This is version 2.3, an update to version 2.1 on disk 678. Shareware, binary only. Author: Holger Kruse

**Shrink** A new archiver that uses dynamic arithmetic encoding with a dictionary size from 1-64Kb. Slower than other archivers, but seems to get better compression ratios. Another interesting feature is that it uses a new IFF format for its archive files. Version 1.1, binary only. Author: Matthias Meixner

**Sizer** Reports the size of selected disk objects (including subdirectories). It reports the number of bytes in all plain files and the number of blocks occupied by files and directories. It is intended for the Workbench user who wants to know if there is room to drag-copy one or more icons. Includes source and binary. Author: Fabian G. Dufee, III

**Fred Fish Disk 700**  
**TextPlus** TextPlus Professional is a TeX frontend word processor. Now you are able to create TeX documents without having to know anything about the professional typesetting program TeX. Makes use of PasTeX, Georg Hessmann's Amiga implementation of TeX. Contains both the English version (4.00EN) and the German version (4.00N). These versions are updates to the 3.00 versions on disk 484. Shareware, binary only. Author: Martin Steppeler

To Be Continued.....

**In Conclusion**  
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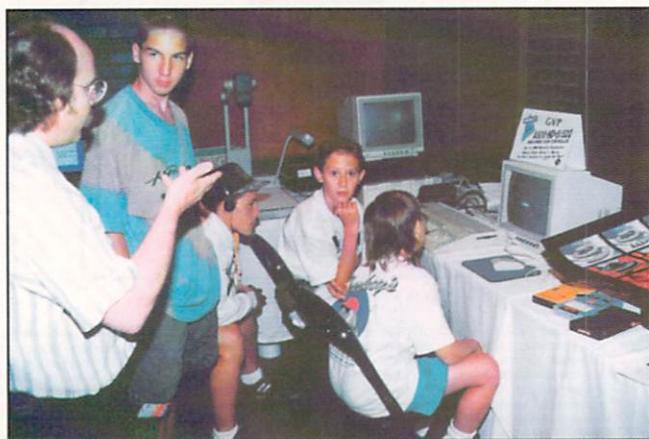
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# And furthermore...



Graphic created by SIGKid artist, Mael Gerard, and printed on a HP DeskJet 500C



Curt Kass (left) was mentor and coach for the project.



SIGKid Video Editor, Jim Kelly, used Toaster effects.



Hui Young Pak and Helen Choi created animations with a Canon digital camera and the Amiga

## SIGKids

SIGGRAPH '92 offered more than just the latest in computer graphics and animation. It offered the future by inviting 30 students ranging in age from 11 to 17 years to participate in a learning lab workshop of video media and techniques. During the week-long event, most of the students were working with a variety of computer platforms. However, 10 students, plus one late addition, were selected to work in the Amiga Art Corner.

Armed with some of the best Amiga software and hardware available, the Amiga enthusiasts were given a project to complete in just six days. Starting on Sunday, they met to construct a video presentation to be used by Nickelodeon's "Nick News W/5" show produced by Lucky Duck Productions. The video was to be "a short solution-oriented animation expressing 'What Is Wrong With America'. Using humor or a positive theme, tell it like it is, and visually offer an answer or solution for our country's problems and difficulties!"

Within two days, the team had created a script, produced a story board, and found film and props to incorporate into the video. They divided the effort into separate work modules and, as each member discovered the different powers of the Amiga, everyone began expanding his or her ideas.

The Amiga Art Corner was the responsibility of Amiga artist and writer Curt Kass. Mr. Kass was able to obtain a large assortment of Amigas on loan from Commodore's Chicago area, Eastern Region sales office. Commodore not only supplied the machines but also provided hands-on assistance from CBM employees Ken Nordine Jr., Stephen Johnson, and Rich Block.

Curt's success at obtaining loaner equipment extended to third party companies as well. Among the software and hardware contributing corporations were Bogen Photo, Canon USA, Digital Creations, DKB Software, Electronic Arts, Great Valley Products, Hewlett Packard, ICD, JVC, NewTek, Pioneer Communications, SoftWood, Sharp Electronics, SyQuest Technology, Systech Electronics, and TechMedia Video. This offering gave the students an arsenal of Amiga tools to learn and explore as they created their project.

Although the students ranged from seventh to eleventh grade, all age differences disappeared in the creation of the team project. Each student understood his or her importance and contribution to the finished project. The teamwork and control of the project is a credit not only to Mr. Kass's ability as a teacher, but also to the maturity and responsibility demonstrated by the students.

The 10 students from the Chicago area were Bob Casey (9th grade), Helen Choi (9th grade), Nathan Fredrickson (7th grade), Michele Gonzales (11th grade), Jim Kelly (11th grade), John Kubo (10th grade), Chris Montoya (10th grade), Adam Mathes (7th grade), Corey Murray (10th grade), and Hui Young Pak (9th grade).

(SIGKids is continued on page 79)



1983 - VIC 20/COMMODORE 64

1984 - C64 MUSIC PERIPHERALS

1985 - AMIGA 1000/PC 10/PC 20  
COMMODORE 128

1986 - PC10 III/PC 20 III/PC 40

1987 - AMIGA 500/AMIGA 2000

1988 - AMIGA 2500/PC 40 III/PC 60

1989 - AMIGA COLOUR PROCESSING,  
ANIMATION, SOUND & VIDEO

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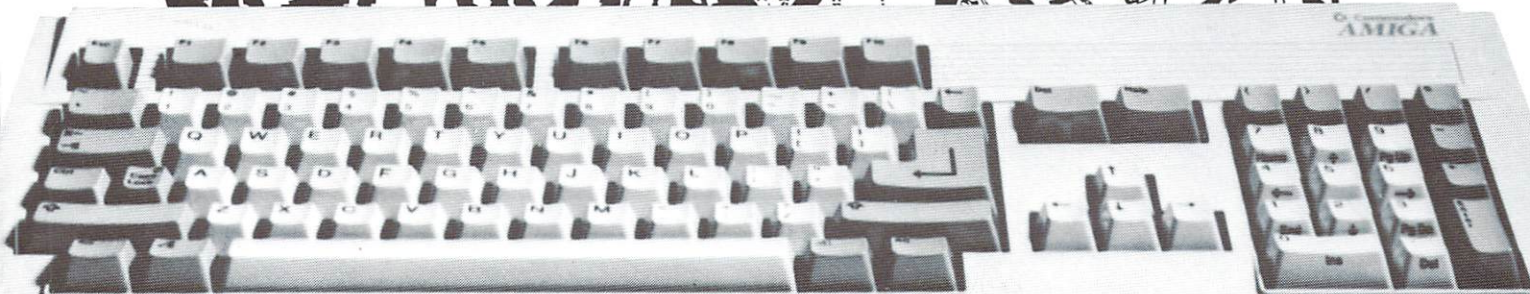
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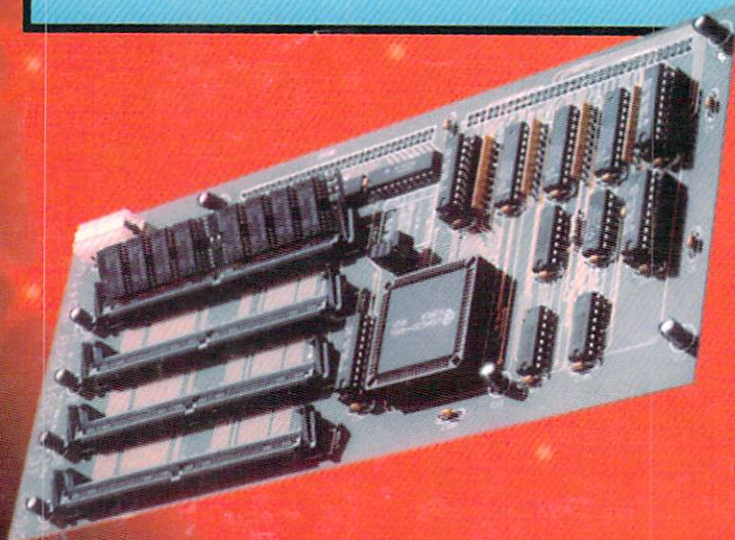
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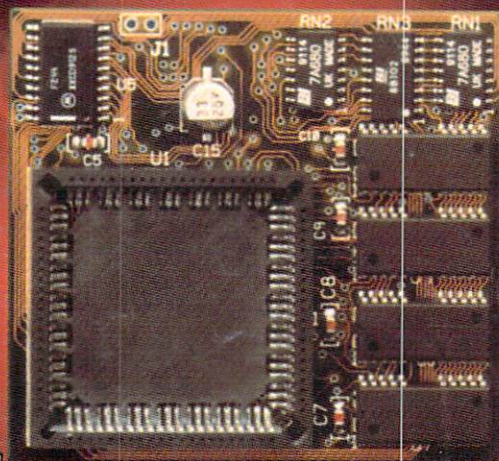
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